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## Original Articles

### OBSERVATIONS RELATING TO THE NATURE OF ATROPHY OF INTESTINAL ORIGIN.


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General atrophy that is associated with, and apparently stands in direct relation to, a greater or lesser degree of preceding intestinal disturbances occupies a position of profound importance in the pathology of infancy. Marasmus is, indeed, so common and often so intractable that the laity are almost as familiar with its general features as are physicians. Much less commonly, but still occasionally, a condition that is, in its chief clinical features, apparently the same as the atrophy of infancy, appears in early childhood. In later life, typical cases of this kind are rare; there are, however, very many instances of serious disturbance of general nutrition that seem to bear a direct relation to intestinal trouble, but are too pronounced in their general features to be satisfactorily explained by the mere loss of nutriment that occurs through lack of digestion and absorption—for these patients may still be absorbing an amount sufficient to maintain or improve nutrition, and yet they emaciate or remain about stationary in a condition of more or less profoundly depraved general nutrition. Cases of this kind have recently been studied by Roehl, who decides that the disturbance of nitrogen absorption does not suffice to explain the tissue loss; and the general absorption is at times quite sufficient to cover their needs.

#### THEORIES REGARDING ATHREPSIA.

An immense amount of work has been devoted to the study of the pathogenesis of infantile atrophy, particularly, but no satisfactory explanation of the nature of the condition has been furnished. It has been shown that digestion and absorption are impaired in most or all atrophic infants, but the degree of impairment is often by no means enough to explain the atrophy. I have myself, with Dr. Caspar Miller, studied the absorption in several such cases, and while it was below normal, it was not exceedingly bad and the infants still absorbed an amount sufficient to have made most of their contemporaries gain in weight and health.

The lesions found at autopsy are, too, insufficient to explain the condition. There is still a somewhat general belief that an extensive primary atrophy of the intestine occurs in these cases; but while this has repeatedly been described and has been considered the cause of the general emaciation, it has been shown by Heubner, Gerlach and Habel that the appearances on which so much stress has been laid are really due to the manner in which the intestinal wall is prepared and cut for microscopic examination. Wentworth's recent able review of the pathology of the condition leaves only a single fact undisproved—Bloch found in several cases an absence of the granules that are normally present in Paneth's cells.

The hypothesis has also been put forward (Escherich) that the disorder may depend on the ferments and other obscure biologic elements in human and animal milk. This, however, could not explain the matter, for it leaves out of consideration the fact that athrepsia occurs in only a portion of artificially fed infants and not in all.

Recently a suggestion of another kind regarding the nature of the condition has been put forward. Since the injection of animals with protein of foreign species is followed by the development, in the blood serum of the animal injected, of substances capable of precipitating the protein that was introduced, Moro and Hamburger have attempted to show that the serum of atrophic infants contains a precipitin for cows' milk—thinking that they could in this manner demonstrate that foreign protein (namely, bovine casein) reaches the circulation in such cases. If this were the case, it might be conceived that this foreign protein produces chronic toxic symptoms that lead to emaciation, even though sufficient food be absorbed. They were not successful in their work, but Moro has recently found such a precipitin in one case. He declines, however, to draw any conclusions from this as to the nature of infantile atrophy. Even if such a precipitin is frequently to be found its presence may, I think, be quite as properly, if not more properly, applied in another way, in support of my own working hypothesis regarding the nature of infantile atrophy, which hypothesis I shall describe.

#### RECENT VIEWS OF PROTEIN DIGESTION.

I shall first, however, in order to make the character of my conception clear, find it necessary to refer very briefly to some of the recent transformations of view concerning the nature of protein, and the manner in which it is digested and utilized by the tissues, and shall refer also to some points in regard to ferments. All these matters are well known to those that have had particular interest in such questions, but are not yet generally appreciated.

The comparatively simple teaching of a few years ago, when put into its briefest form, was that the digestion of protein consists essentially of hydrolysis into albumoses and peptones, and the formation of small amounts of some simpler bodies—chiefly amino-acids, such as leucin and tyrosin, and that the albumoses and peptones are absorbed and, in the process of absorption or very soon after this, built up again into native protein. The process as conceived at that time was, therefore, in the main part merely hydrolysis of higher protein to lower forms of protein—the major portion of the substance

remaining protein all the time, and the chief apparent purpose of digestion being to transform the ingested protein into substances that are relatively very soluble and that easily pass animal membranes; that is, to get them into a form in which they can readily reach the circulation.

Throughout recent years, however, it has become increasingly evident that the change is much more fundamental than this; and the key to the understanding of the main purpose of digestion seems to have been furnished by more elaborate study of the products of digestion, and particularly by a more intimate knowledge of the composition of protein. That is, it has been shown that a protein consists of a union of numerous crystalline substances which are relatively simple in their structure as compared with protein, but still somewhat complex; these are chiefly or entirely so-called amino-acids, among the many of which leucin and tyrosin are the most popularly known representatives. Protein substances of different kinds contain varying amounts of the various amino-acids, but they differ quite as much in the quantity as in the quality of the component substances. Some forms of protein do contain some kinds of amino-acids that other protein substances do not, but the distinction between different protein substances seems to lie quite as much, if not more, in the fact that this one contains more of certain amino-acids, that one contains less of these amino-acids but more of others. To use the picturesque simile employed by the Germans to describe the matter, proteins are constructed of "buildings stones," and stones of many shapes are used in building any protein; but the ultimate structures differ in their architecture, and in giving them their proper form, sometimes more stones of one shape are employed, sometimes more of another.

Concurrently with the development of the above mentioned knowledge, it has been shown that the digestive breakdown of protein is much more complete than was previously taught. Even pepsin can carry a large part beyond the peptone stage, and trypsin does this much more quickly and extensively than pepsin. Trypsin, indeed, is capable, even in laboratory experiments, in some circumstances, of carrying the whole amount of protein beyond the peptone stage; and, hence, under the more favorable conditions that exist in the animal organism, it probably carries most, possibly nearly all, beyond that stage.

At the same time, it has been made apparent that the intestinal mucous membrane contains a proteolytic ferment which has been given the name erepsin. Whether this has the characteristics attributed to it by Cohnheim—namely, inability to attack native protein, but active powers of further fragmenting albumoses and peptones—or whether, like trypsin, it can carry on the process from the beginning, is a question that is still *sub judice*. Of the existence of a proteolytic ferment in the intestinal mucous membrane, there is, however, no question; and there is every probability that it is produced there, and is not simply pancreatic trypsin that has lodged there.

It seems at present that the purpose of digestion is to fragment the protein complex thoroughly into its constituent amino-acids, or building stones; and that the protein falls first into the hands of pepsin, then trypsin, and next the ferment of the intestinal mucous membrane, in order that with each attack the fragmentation may be made more complete. It is not yet clearly determined whether these ferments actually differ, as they have been supposed to do, in the nature of the end products that they produce. The progressive action of one after the other may be intended simply to permit each succeeding ferment to put finishing touches on the portions of unfragmented or partially fragmented protein that have escaped the preceding ferments. The prime object of this breaking-up process appears to be to yield the amino-acids themselves; in order that they may be available in free form and in proper quantities, for a complete reconstruction, which will yield protein homologous with the individual to be nourished. It is not necessary to fragment all portions completely as certain fractions will be obtained that can be reconstructed into homologous forms without complete fragmentation, but except for such fractions it must be complete. That the digestive process, together with the subsequent reconstruction process, does accomplish this transformation—that is, that it does change protein of foreign species, containing certain amino-acids in quantities peculiar to this protein, into another form of protein, apparently containing the same amino-acids in quantities peculiar to the individual that has digested and absorbed the protein—has been shown experimentally with almost final positiveness; and it has likewise been shown that the reconstructive process occurs before the absorbed digestive products reach the general circulation, almost certainly, indeed, in the intestinal wall itself.

Furthermore, physical chemists consider it to be theoretically well nigh certain that the same ferment that accomplishes fragmentation also causes the reconstruction—that the direction in which a ferment acts, whether toward the production of simpler products or toward the formation of more complex substances is determined, not by the nature of the ferment, but by the physical and chemical conditions of the medium in which it acts and by the concentration of the products of digestion. If conditions favorable to disintegration are present, the ferment hastens this; but if the conditions favor synthesis, the same ferment hastens this. This has actually been shown to occur with some ferments that act on carbohydrates and fats; and similar observations that are suggestive, though not yet conclusive, have been made regarding proteolytic ferments, the conditions of such experimentation with the latter ferments being much more difficult than those attached to carbohydrate and fat ferments. If this view that ferments are capable of reversed action is correct, as a general principle, and this now appears most probable, the same ferment in the intestinal wall that continues the process of fragmentation of the protein food also carries on the process of reconstruction of homologous protein.

This cursory statement of some of the main aspects of the present day teaching of the physiology of digestion will, I trust, suffice to make clear the hypothesis that led to the observations I am about to report. My results have not yet been sufficiently extensive or elaborate to justify, of themselves, quite so formidable a preamble as I have given, were it not that the explanation is necessary in order to make their bearing clear. So far as they go, however, they offer some support to the following hypothesis:

### THE AUTHOR'S HYPOTHESIS.

Clinically, it is quite clear that most atrophic infants do well, provided they are not already far advanced toward death, if human milk can be given them; while with even the most capably conducted artificial feeding,

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they usually have, at best, a precarious and long struggle for existence, and very often go slowly, but persistently, toward death. It seems, then, that the difficulty consists in making use of milk of foreign species. The difficulty does not lie simply in acomplishing the absorption of the elements of the heterologous milk; for, as I have already noted, sufficient is absorbed in many of these instances to produce a gain in other infants.

It has seemed to me that the disturbance may be the result of disorder of the ferment function of the intestine. That is, when the protein of the food is progressing in the course of its breakdown the final attack by the ferment of the intestine does not occur or is ineffectual; that the protein complex is torn apart more or less completely by the pepsin and trypsin, but that fragmentation sufficiently complete, in order that the structure may be rebuilt in a new form entirely homologous with the patient's tissues, does not take place.

Granting the absence or serious reduction of this ferment in cases of atrophy, one of two things may be conceived of as occurring as a consequence: in the first place, it might be that the protein would be fragmented to various stages short of absolute completeness—to albumoses, peptones, simpler non-protein amino-acid complexes (heptides) and in more or less considerable extent, to free amino-acids—and that these would then be reconstructed; but the synthesis taking place without sufficient preceding fragmentation, the product of synthesis is not the normal one, but is more or less hybrid in character. To use again, for clearness of conception, the building stones simile, it would be like taking away the upper structure of a building, while leaving the foundation unaltered, and then making the new structure conform to the old foundation, instead of tearing out the latter completely and building anew from the start. The infant would, in such a case, have his circulation and tissues supplied with more or less markedly foreign protein, while normal infants receive homologous protein. The infant nourished with mother's milk, even though he absorbs all his protein food wholly unfragmented or only half fragmented, would not so far as we know, be crippled by this, for his food protein is already homologous. The artificially fed infant that I have postulated, however, who receives imperfectly broken down, and hence improperly reconstructed protein, has manifest difficulties in his way in carrying out metabolic processes; and the most evident difficulty would be in tissue construction. He would be able to use much, at least, of the more or less completely foreign protein in obtaining energy, that is, he would be able to disintegrate it, for it is known that animals can thus utilize considerable amounts of foreign protein when introduced subcutaneously or into the circulation. In attempting to use it to construct tissue, however, he would be obliged to go through the difficult task of disintegrating again, and then completely reconstructing it; while, when the tissues are, as is normally the case, served with homologous protein, it would seem evident that the process of construction and repair of the tissues would be comparatively easy. We have, indeed, no knowledge that the tissues are capable of building new tissue from foreign or partly foreign protein served thus directly to them, and it may readily be that they are more or less completely incapable of it. They can undoubtedly secure energy from it and can transform one variety of homologous protein into another variety of homologous protein, but this is very different from transforming a foreign protein into a homologous protein. Even if they could do the latter, to impose on them the necessity for carrying it out would be to make entirely unnatural demands of them, and they would doubtless be likely often to fall under the extra burden.

The second idea conceivable as the result of absence of the intestinal proteolytic ferment is dependent on complete acceptance of the theory of reversibility of ferment action. While this theory now appears to be probably susceptible of general application, this has not been actually demonstrated to the same extent as have the other matters that I have so far used in constructing my hypothesis. Therefore, although this theory will probably be shown to be correct, I mention its relation to the subject under discussion in only a secondary place. In case it applies in this instance, the effect would appear to be that, the intestinal ferment being reduced or absent, not only would disintegration of the protein suffer, but the especial agent that carries out the reconstruction of protein being decreased or absent, the reconstruction also would be more or less completely absent. Instead, therefore, of entering the circulation as hybrid reconstruction products, the more or less completely fragmented products would themselves go into the circulation, and use of them by the tissues, in the synthesis of new tissue, would be much the same difficult process as in case they had been made into hybrid protein.

Either of these ideas would be in harmony with the repeatedly mentioned fact that absorption in many of these cases is sufficiently good to maintain nutrition; for incomplete fragmentation would not prevent absorpiton, since digestion products, all the way from albumoses on, are readily capable of absorption—and indeed, this occurs with many unchanged albumins. The hypothesis would in either case, also, be in harmony with—indeed, it is dependent on and, if correct, explanatory of—the fact that the difficulty lies in the utilization of milk of foreign species. There is no good evidence that infants ever fail to assimilate human milk, unless they are already desperately ill; provided that the milk is not so rich in some of its constituents as to upset digestion or so poor as to be insufficient; and provided, also, that the mother or nurse supplying the milk is not the subject of physical or emotional disturbances that presumably cause the quality of the milk to be disordered. In other words, there is no evidence that an infant, not desperately ill, that is taking normal human milk of such composition that it does not disturb digestion, ever fails to be able to utilize this milk on account of the character of its constituents. On the other hand, large numbers of infants, when fed on foreign (that is, usually cows') milk, even when the constituents are of wholly normal quality, do badly or die, however one may vary the proportion of the constituents in deference to difficulties in digestion; often, indeed, even when no noteworthy difficulties in digestion are present. The experience of Westcott, Holt and others, shows that many malnourished or even severely atrophic infants that do badly on cows' milk mixtures exhibit remarkable improvement if, while their diet still consists chiefly of the same mixture, small quantities of human milk are added. This suggests strongly that they can secure from the artificial food the energy that they need, if only the essential moiety absolutely demanded for tissue-building and repair is given them in normal form.

The hypothesis also conforms with the fact that infantile atrophy, as well as the malnutrition of older children and adults, is not a clearly delimitable condition. There is no definite boundary line on one side of which

cases are simply malnourished, while on the other side they are the subjects of persistently progressive atrophy; nor are there any cases that can be labeled essentially fatal. The worst of them almost may get well if only one can secure a food that is especially suitable in the particular case. If in such cases human milk is used improvement is often remarkably rapid, while on other foods it is, as a rule, slow and laborious at best. The hypothesis that I have described does not conflict with these facts, but is rather supported by them. Such variations in the severity of atrophy may be chiefly a question of a larger or smaller degree of reduction of the ferment action of the intestine. It is not to be expected that the ferment or ferments would often be entirely and persistently absent; it is rather to be expected that various degrees of reduction of the amount or the activity of the ferments would occur in different cases, and that there would correspondingly be more or less severe results. Since there would be no essential structural change in the intestine, but simply more or less complete failure of a function—a function, however, that would seem to occupy a critically important position in the process of homologizing protein—any little increments added to the powers of the patient to carry on functions properly (such increments as would be secured through better feeding and better hygiene, and the consequent better general nutrition) would improve the manufacture of ferments, as well as other functions, except in cases so badly damaged that the recuperative powers were lost.

The general line of thought that I have indicated, whether my hypothesis is correct or not, would also offer a reasonable explanation of the fact that extreme grades of atrophy are so much more common in very early life than in older persons. After growth is completed, synthesis of tissues is necessary only in so far as repair is required; while in the young not only is repair required also, but there is, in addition to this, a relatively enormous amount of synthesis necessary in manufacturing new tissue. Any disorder that makes synthesis of tissue more difficult would consequently fall particularly heavily on the young.

I would likewise note that the one point regarding the pathology of infantile atrophy that is as yet unassailed (Bloch's observation that granules are absent from Paneth's cells) seems to me to suggest of itself that the ferment functions of the intestine may be at fault. Similar granulations are observed in other digestive organs, when they functionate normally, at those times when they are preparing their digestive secretions; while after the secretions are discharged the granules become much reduced in number or entirely absent. Lack of granules from the cells in the intestines of atrophic infants may, therefore, readily mean that these cells are not producing digestive secretions, while the same cells do produce them in other infants.

I have previously mentioned the possible presence of precipitins for bovine casein in the blood serum of atrophic infants. This matter is not of much importance in this connection, as there is little evidence as yet that such precipitins exist. If they do exist it is apparent that their presence is quite as directly in conformity with the view that I have outlined as with the suggestion that a chronic toxic state results from the presence of the foreign casein in the circulation. Those that have experimented on the effect of subcutaneous injections of unaltered foreign protein differ in their conclusions; but it may, I think, be said fairly, so far as this concerns the question immediately under discussion, that atrophic infants show absolutely no clinical evidences of any such actively toxic state as has been described by some authors as consequent on the subcutaneous administration of very small amounts of foreign protein. Yet if such infants do have casein-precipitins in their blood, they must absorb directly quite as large amounts of casein as are used in injection experiments. This point seems to me to rob the theory of a foreign-protein intoxication of its chief established basis, so far as infantile atrophy is concerned; although I, of course, do not deny the possibility that such an intoxication may have something to do with the condition.

### CASES STUDIED.

Up to the present, my studies regarding the defensibility of my hypothesis have consisted of investigation of the proteolytic power of the intestines obtained at autopsy in eight cases. Three of these cases were characteristic instances of progressively fatal atrophy (two in infants and one in a child of two years); three were cases of advanced emaciation that was known to be due to other causes than simple atrophy, these cases serving as controls; and the other two cases were instances in older persons of continuous and finally extreme emaciation for which autopsy showed no cause.

Although I have been working on the question, as opportunity offered, for a year past, the number of cases that I have to report is small, because I have, in order to avoid confusion, limited my observations relating to the atrophic cases carefully to those in which the clinical conditions and the autopsy findings showed an entire absence of evidence of infection of the digestive tract, and in which, also, there was absence of evidence of poor absorption or of a noteworthy degree of gastroenteritis. I have found it difficult to secure such material from entirely reliable sources. The three cases of infantile atrophy that I report were, however, of this kind. All showed at autopsy merely the lesions of simple, uncomplicated atrophy, and clinically, all had shown merely progressive wasting, with no gastric symptoms. Intestinal symptoms, also, were absent in all except Cases 2 and 3, in which two or three bowel movements occurred at times in the 24 hours. The movements, however, were not large, appeared well digested, were of good color, and did not contain visible mucus.

Case 1 was under the care of Dr. Howard Hill, who did the autopsy. Cases 2 and 3 were under Dr. J. P. Crozer Griffith's care at the Children's Hospital, and Dr. C. Y. White and Dr. Howard Carpenter made the pathologic studies in them. For the material from the other cases, I am indebted to Dr. Longcope and Dr. Lavenson. I wish, also, to acknowledge my especial indebtedness to Dr. Ralph Pemberton for aiding me in the studies of the cases. The details of the methods used will be given later with the figures obtained. Meanwhile, I shall briefly discuss the results.

In the first of the three cases of infantile atrophy, the proteolytic ferment in the intestinal mucous membrane was present in extremely small amount, if at all; in the second it was greatly reduced as compared with the three control cases; in the third case, which was the most rapid in its progress, the infant dying at five months, no ferment-action was demonstrable. In the first of the two cases of emaciation of undetermined cause in older persons, ferment-action was exceedingly slight, in the second of these cases it practically could not be demonstrated at all. Indeed, in the whole group of five atro-

phic cases, all those that show slight ferment-action provide, to indicate this, figures so small as to be almost or quite within the range of error. Since, however, in all instances, two nitrogen-estimations were, as is usual, made for the purpose of controlling the results; and since, in all instances (except case 5, in which the control was lost), the two estimations corresponded practically exactly, I think that the figures are accurate, and do not indicate slight ferment-action.

The figures from the three control cases that had not simple atrophy do not, to be sure, indicate the digestion of large absolute amounts of protein; but they do show relatively large amounts as compared with the atrophic cases, and it must be remembered that I was dealing with small figures in all cases, since, as may be seen in the protocols of the experiments, only 10 c. c. of milk was introduced in each instance for the ferment to act upon, in addition to the small amount of protein present in the extract which contained the ferment; and the amount of milk mentioned represents only about 0.05 grams of nitrogen. Considering that the period of digestion was purposely made short (only four hours), in order to be more certain of excluding bacterial action, the figures in the non-atrophic cases really show a very considerable degree of digestion, while the atrophic cases, at best, show almost none.

The objection may be offered that the differences were due to bacterial action. Toluol was used freely, however; the experiments were made so short that there was little opportunity for bacteria to act; and, more important than this, there are no irregularities in the results to suggest that bacteria had been active. It is, perhaps, impossible in experiments carried out as these were with an extract of the mucous membrane, to exclude bacterial action absolutely. I used this method, however, instead of attempting to isolate the ferment by means of precipitation and dialysis, because I believe that it is possible only by means of the method followed to secure quantitative comparisons in different cases; and bacterial action cannot be said to have produced the results obtained, unless one assumes the rather strained position of considering that bacterial proteolysis occurred regularly in the non-atrophic cases, while it was regularly absent or almost absent in the atrophic.

Leaving aside the two cases in older persons for the present, the bearing of the results in the three of infantile atrophy seems to me to be the following: So far as these cases go, they harmonize with the hypothesis that I have stated, since they demonstrate that in these cases there was great reduction or entire loss of proteolytic power in the intestinal mucous membrane. It may readily be thought that this was a mere secondary effect of the profound emaciation, but this appears decidedly improbable, when one considers the three control cases, all of which were extremely emaciated, but as the result of definite causes other than simple atrophy. These cases show very much greater proteolytic action than do the atrophic cases. It might be considered, also, that there was simply a general reduction in the ferments of the digestive tract. I attempted to exclude this objection by testing for pepsin in extracts of the gastric mucous membrane of the atrophic cases, and in all three instances I got a markedly positive result; hence pepsin was present in all.

Beyond what I have said, I do not think I can speak decidedly as to the meaning of my results. If continued studies shall show similar results consistently, this will demonstrate definitely a marked disturbance of the ferment-function of the intestine, and will indicate strongly that this has an important primary relation to the atrophy. Further studies are necessary, however, in order to show that this is a constant condition in atrophy, and a condition that is usually absent in other cases. Furthermore, in addition to the line of observation that I have been following, it is important to determine whether the intestine does or does not, in these cases, retain its power to produce secretin and enterokinase, and thereby to excite secretory activity in the pancreas and to activate the pancreatic trypsin. It is likewise important to determine, if possible, to what extent the pancreas retains its functional capacity in these cases; although this is extremely difficult to do satisfactorily with postmortem material, because in extracts of the pancreas the trypsin becomes, to some extent, activated, and it is difficult to determine to what extent this occurs, and therefore difficult to secure reliable results in comparing different cases.

In spite of the fact, which I have repeatedly mentioned, that absorption in these cases often does not suffer enough to explain the atrophy, it may be that the pancreas, as well as the intestine, shows reduction, and perhaps, entire loss of ferment-function. We know now quite clearly that fat-absorption is sometimes good in the entire absence of pancreatic secretion; and it is quite possible that this is more largely true of protein than we have thought. Indeed, in many cases, with severe lesions of the pancreas, the nitrogen-absorption is known to be not bad. This possibility of disordered pancreatic function is of particular interest in infants; for there is some testimony, though not based on very good evidence, that in the first three months or so of life the pancreas has only a subordinate rôle in carrying on digestion and absorption, while after this it becomes increasingly important. Athrepsia in infants is particularly likely to begin about the third month of life; and, hence, if the above-mentioned view is correct, it becomes possible that the difficulty in athrepsia may be partly, at least, the result of failure of the pancreas to take up the large function that it should assume. If the pancreas fails to do its duty, fragmentation of the protein-molecule will be still more incomplete than if the intestinal ferment only were absent. In this case, pepsin alone would be left to digest the protein sufficiently for its absorption; but in infants, at any rate, with their simple milk diet, it is probable that pepsin is capable of doing at least a very large part of this. If there is any truth in the view that I have just noted concerning the development of the pancreatic function in early life, pepsin must, in even normal infants, in the very early weeks of their existence, do most of the work except that carried out by erepsin.

In addition to what I have mentioned, it is desirable to attempt to determine whether amino-acids or peptides do escape into the circulation in these cases; or whether, on the other hand, the circulating protein of atrophic cases shows differences from the circulating protein of other cases. These last points are very difficult to determine with our present methods, particularly with the paucity of material provided by the cadaver of an athreptic infant. They may be possible of solution in cases of atrophy that occur in older persons, perhaps even during life.

Furthermore, it is desirable to determine whether there are alterations in the ferments in the tissues that lie beyond the digestive tract.

Finally, I would, with an equal consideration of the

criticisms that I have put upon my previously-mentioned results, refer to the two cases in older persons, as they need brief separate description. The first of these, Case 4 in the protocol, was an instance of dementia præcox in a man of 27, who was under the care of Dr. Charles W. Burr at the Philadelphia General Hospital. The only noteworthy points in his history were that, after prolonged overwork, he had developed delusions of persecution; and this had been followed by a stuporous state. He was admitted in the latter condition; and for eight months afterwards, remained in a state of complete apathy, or negativism, physically and mentally. Throughout this time, he was unresponsive and practically motionless. He was fed continuously through a stomach-tube, on about three quarts of milk and eight eggs a day; but in spite of this he emaciated constantly and finally to an extreme degree. He then came out of his stupor rather suddenly, took an interest in his surroundings and ate with appetite. Though he then took no food beyond the ordinary ward diet (and this is certainly not more than what had been given him before, but rather less), and though he was in this period moving about and doing a little work, while previously he had been absolutely quiet, during the next three months, he gained flesh rapidly and became actually fat. He then went into stupor again, and remained so for two years and ten months, until he died. Throughout this entire time, he had been fed on the previously mentioned amounts of milk and eggs, through the stomach-tube, and during this period he again emaciated progressively, and ultimately to the last degree.

Case 5 was a patient of 25 years, who had meningitis followed by hydrocephalus, lasting seven weeks. During this time he was stuporous and during the last three weeks he was fed through a stomach tube. He emaciated rapidly and finally to an extreme degree, in spite of the subsidence of any evidences of infection.

Both these cases, as I have stated, had practically no evidence of the presence of proteolytic action in extracts of the intestinal mucous membrane. I would note also that in both, contrary to the conditions in the infantile-atrophy cases, there was but faint, if any, evidence of the presence of pepsin in the extracts from the gastric mucous membrane. Neither case had shown any digestive disturbance during life, and neither had any lesions of the alimentary tract at autopsy. There was no direct occasion, therefore, for considering that the intestine was at fault in any way in these cases, but I studied them in this connection for two reasons: First, because they were instances of unexplained progressive emaciation; and second, because Pawlow, in discussing his celebrated work on the influence of psychic factors upon the secretion of digestive juices, suggests that the more or less profound disturbances of nutrition often seen in depressive forms of insanity may be, to some extent at least, due to the entire lack of psychic stimulus to the production of digestive ferments.

Two cases do not justify much comment. I would say only that they may, on the one hand, be evidence merely that my hypothesis is incorrect; that is, reduction or loss of the ferment functions of the intestine may occur in a variety of conditions and may have no primary relation to any disease or symptoms, and these cases are, perhaps, merely examples of that possibility. On the other hand, they may prove to have importance in explaining such conditions. In Case 4, especially, there was a striking succession of events, which appeared to show that the emaciation was closely related to the stupor. This may mean simply that some intoxication or other obscure condition was the cause of both stupor and emaciation, but it may be that the whole disorder was nutritional—that depraved nutrition from overwork produced psychic depression, and the latter so largely depressed physical functions, among which is the function of elaborating ferments, as to cause the progressive general atrophy. The sudden alterations in both mental and physical condition that occurred in this patient and are common in similar cases is certainly quite as much in harmony with this view as with the theory of intoxication, for every one is familiar with the extremely sudden changes in the gastric secretion that are known to occur at times in cases of purely neurotic achylia gastrica.

I believe, therefore, that the emaciation occurring in depressed and stuporous states, and also other obscure forms of emaciation, are suitable subjects of study from the standpoint that I have indicated. I do not, of course, mean to suggest in the most distant way that emaciation in general is dependent simply and solely upon failure of intestinal ferments. I mean merely that lack of these and of other ferments may be an important element in cases of this sort, and since the proteolytic ferment of the intestinal mucous membrane, according to prevailing views, seems to occupy a conspicuously important position in the process of utilizing protein, it is possible that more or less complete absence of this ferment, owing to the disordered chain of events that would probably ensue upon its absence, may be one of the important elements in explaining some instances of progressive emaciation, and, too, of chronic, but stationary, depraved nutrition. It is also possible that at times lack of this ferment is the chief and, indeed, of itself a sufficient, explanation of the nutritional disorder.

### THE AUTHOR'S METHODS.

The methods used in my work were as follows: The whole of the stomach and small intestine was secured directly after the autopsy. This means from 12 to 18 hours after death, but a delay of this length appears from Vernon's observations to cause no decrease in the amount of erepsin. There was some difference in the time that elapsed in the individual cases between death and autopsy, but this was, at most, a few hours, and the average time in the atrophic and non-atrophic cases was just about the same. As soon as they had been secured, the stomachs and intestines were very thoroughly washed with running water. In obtaining the extracts the mucous membrane was scraped off the entire surface of the stomach or small intestine, whichever was being worked with; the whole amount obtained was thoroughly mixed and weighed portions were taken. Scrapings from the entire mucous membrane were used because the amounts of pepsin and erepsin, respectively, in different portions of the stomach and bowel differ largely; and in using organs from subjects of different ages and sizes, it would be impossible to be certain that exactly similar portions had been taken if one simply cut out especially chosen parts and took the scrapings from these.

Of these mixed scrapings from the intestine, a weighed portion was each time taken and ground for 10 minutes in a mortar with sand. The ground scrapings and sand were then washed into a flask with Ringer's solution, using always 30 parts of the solution to one part of the scrapings. Toluol was then added; and the flask was stood aside for four hours, shaking it every 20

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minutes to half an hour. The contents were then strained, each time in the same manner, and 50 c. c. of the strained fluid was introduced into each of two flasks. That in one of these flasks was immediately boiled for a moment and then cooled, and to each flask was added 10 c. c. of previously-neutralized milk, the milk being from a supply that is constantly under chemical supervision, and that I know from a large number of personal estimations to vary extremely little in its nitrogen-content. Toluol was then added to each flask and thoroughly shaken with the fluid, and both flasks were placed in the thermostat at body-temperature for four hours. Following Cohnheim's procedure, I then added 10 c. c. of saturated sodium chloride solution; boiled a moment; added 10 drops of acetic acid; boiled again; filtered and tested the filtrate to see that it was biuret-free. If it were not, or if it were not perfectly clear, it was filtered again, when it always became perfectly clear and biuret-free. The nitrogen in the filtrate was then estimated. The results gave the "uncoagulable" nitrogen, and the excess in the specimen that was not boiled in the beginning over that in the boiled specimen showed the amount digested. The figures given are for the whole amount in the flask.

At the same time that these flasks were prepared, two other flasks, each containing 25 c. c. of the extract from the intestinal mucous membrane (boiled in one; unboiled in the other) and 10 c. c. of a 1 per cent. solution of Witte's peptone, together with toluol, were placed in the thermostat for four hours, and afterwards coagulated in the manner mentioned, and the strength of the biuret-reaction in the filtrate was noted. The degree of reduction in the intensity of the biuret-reaction in the unboiled specimen, as compared with the boiled specimen, provided qualitative evidence of the activity with which the "peptone" had been digested beyond those bodies that yield a biuret-reaction.

I used cows' milk as the substance to be digested, because it is the food upon which artificially-fed infants depend. Even if Cohnheim be correct in claiming that erepsin can not digest most unchanged albumins, and that it is necessary that albumins be previously digested at least as far as the albumose-stage, casein is, nevertheless, an entirely appropriate substance to use in testing the activity of erepsin; for Cohnheim himself states that casein constitutes an exception to the above-mentioned rule, since, unlike most other undigested albumins, it is acted upon by erepsin. In case Cohnheim is right in stating that erepsin acts upon casein but not upon most other unchanged albumins, this of itself strongly suggests that the ferment may be especially important in infants whose diet is limited to milk. It was, indeed, this statement in Cohnheim's article that first brought to my mind the possible relation of this ferment to infantile atrophy. I have not, however, considered that the proof that erepsin can not act upon other albumins is sufficiently definite to make it justifiable to use this point in my argument, in the earlier part of this paper, in favor of my hypothesis.

The pepsin tests were qualitative only. The scrapings of the gastric mucosa were placed in one-twentieth normal hydrochloric acid, in the proportion of three parts scrapings to 200 of hydrochloric-acid solution, and allowed to stand until the next day, when the fluid was strained off. Of the strained fluid, 25 c. c. was introduced into each of two flasks, one of which was boiled and then cooled. To each flask I then added 10 c. c. of a mixture of one part of fresh white of egg in 10 parts of one-twentieth normal hydrochloric acid. These were then put in the thermostat for four hours. They were then neutralized, 10 c.c. saturated sodium-chloride solution was added, the mixture was then boiled, rendered slightly acid with acetic acid, boiled again, then rendered slightly alkaline with sodium hydroxid, boiled again and filtered perfectly clear. The filtrate was then tested by the biuret-test and by precipitation with phosphotungstic acid. The bulk of the precipitate to the latter indicated the amount of digestion-products, and the intensity of the biuret-test indicated the same.

### RESULTS.

CASE 1.—Atrophic child of 2 years, had been emaciating for a year after preceding digestive disorder. The filtrate from the two flasks containing intestinal extract gave, after digestion, the following figures for nitrogen:

| | |
|---|---|
| Unboiled specimen | 0.0200 |
| Boiled | 0.0191 |
| Increase | 0.0009 |

Witte peptone digestion: Boiled and unboiled indistinguishable in biuret test.

*Pepsin Test.*—Biuret entirely absent in the boiled specimen; decided in the unboiled. A slight precipitate to phosphotungstic acid in the boiled specimen; much more marked in the unboiled.

CASE 2.—Atrophic infant of six months; weaned at four months; very ill-nourished then and had grown progressively worse since: Erepsin digestion experiment.

| | |
|---|---|
| Unboiled | 0.0117 |
| Boiled | 0.0088 |
| Increase | 0.0029 |

Witte peptone digestion: Boiled slightly more marked than unboiled.

*Pepsin Test.*—A trace of biuret in the boiled specimen; marked reaction in the unboiled. Phosphotungstic precipitate slight in boiled; marked in unboiled specimen.

CASE 3.—Atrophic infant of five months; weaned at three months; emaciating continuously since: Erepsin digestion experiment.

| | |
|---|---|
| Unboiled | 0.0144 |
| Boiled | 0.0144 |
| Increase | 0.0000 |

Witte peptone digestion: Boiled and unboiled indistinguishable.

*Pepsin Test.*—Biuret absent in boiled specimen, distinct, but not very marked in the unboiled. Phosphotungstic precipitate very slight in the boiled; more bulky in the unboiled, but less marked than in the other cases.

CASE 4.—Dementia præcox: Erepsin digestion experiment.

| | |
|---|---|
| Unboiled | 0.0156 |
| Boiled | 0.0137 |
| Increase | 0.0019 |

Witte peptone digestion: Boiled and unboiled indistinguishable.

*Pepsin Test.*—A trace of biuret in both the boiled and the unboiled specimen; very slight in both, and no difference observable. Slight phosphotungstic precipitate in both; no marked difference.

CASE 5.—Hydrocephalus: Erepsin digestion experiment.

| | |
|---|---|
| Unboiled | 0.0182 |
| Boiled | 0.0179 |
| Increase | 0.0003 |

Witte peptone digestion: Boiled and unboiled indistinguishable.

*Pepsin Test.*—Faint trace of biuret in both the unboiled and the boiled specimen, and a very slight phosphotungstic precipitate in each.

CONTROL CASES.

CASE 6.—Infant of nine months, dead of general tuberculosis: Erepsin digestion experiment.

| | |
|---|---|
| Unboiled | 0.0306 |
| Boiled | 0.0112 |
| Increase | 0.0194 |

Witte peptone digestion: Boiled pronounced biuret, unboiled very slight.

CASE 7.—Infant of five and a half months, dead of slow starvation. (Extremely insufficient feeding by an ignorant mother; admitted moribund): Erepsin digestion experiment.

| | |
|---|---|
| Unboiled | 0.0215 |
| Boiled | 0.0147 |
| Increase | 0.0068 |

Witte peptone digestion: Boiled very distinctly more marked than unboiled.

CASE 8.—Adult, died in convalescence from typhoid fever, after a long illness and extreme emaciation: Erepsin digestion experiment.

| | |
|---|---|
| Unboiled | 0.0229 |
| Boiled | 0.0117 |
| Increase | 0.0112 |

Witte peptone digestion: Boiled marked, unboiled slight.

## HEMOLYSIS IN PERNICIOUS ANEMIA, AUGMENTED BY URINARY RETENTION.

REPORT OF CASE.

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An article on "Recurrent Intermittent Retention of Urine Occurring with Remissions in a Case of Pernicious Anemia"[1] attracted my attention and led me to compare it with a similar case lately observed in the medical clinic of Professor George Dock. Dr. Cunningham's case was a male, aged 47, who had well-marked symptoms, physical features and a typical blood picture of pernicious anemia. In addition he had a history of retention of urine four years before, after which he was regularly catheterized for three months. At the time of his admission he urinated every two hours and was up more often during the night. In addition, difficulty in starting his urine and dribbling were complained of. Examination revealed a hypertrophied prostate, sufficient to cause frequent attacks of retention. Cystoscopic examination showed a chronic cystitis, and on draining the bladder as much as thirty-six ounces of residual urine were obtained. Bottini's operation was performed under cocain anesthesia. In three months the patient had no urinary symptoms and his blood was in good condition. He returned because of the reappearance of the anemia one month later, and complained at the same time of urinary symptoms—namely, dribbling and difficult micturition. The residual urine had again increased. The bladder symptoms were relieved, and along with the improvement in his blood his urinary symptoms became better. In six months he had a similar attack and again recovered. Finally two years and two months after the onset, another attack came on from which the patient never recovered, dying from "uremia." In these numerous attacks the lowest blood count was 472,000, hemoglobin 10 per cent.; the highest 3,500,000, hemoglobin 45 per cent. The postmortem of the urinary system revealed chronic cystitis, hypertrophied prostate, dilatation of the ureters, kidneys, pelves and calices. Urinary findings at each examination were practically the same. The urine was pale, of low specific gravity and acid or neutral. There was a trace of albumin, but no sugar. There was always sediment consisting of pus, blood, and hyaline and granular casts.

In many respects the case I purpose to report herein resembles the one just outlined.

*Patient.*—M. L., aged 56, stonemason, American and single, came into the medical clinic on Jan. 4, 1907, complaining of numbness, stiffness of the hands and feet, diarrhea and loss of appetite.

*History.*—There was nothing notable in the family history. He had had typhoid at 15. He denied venereal diseases. Drank beer in moderation and smoked six pipefuls of tobacco daily. Five years previously, following exposure to cold and dampness, both shoulders became stiff, and there was some loss of power in his legs. The weakness persisted and this he noticed was more apparent on the least exertion. Diarrhea began two weeks before coming to the clinic, with from four to six stools per day. At this time he had grown dizzy and stumbled occasionally. His hands were numb and he found it impossible to button his clothes. He had had difficulty with urination for some time, but could not definitely remember the time of onset. In the early part of October he began to find it necessary to get up at night to urinate. Soon after this a burning pain at the beginning of urination and dribbling annoyed him. These symptoms became more pronounced so that when seen the patient urinated about every two hours and found it necessary to rise at least three times every night to empty his bladder. The urine was small in amount, pale yellow, and slightly turbid.

*Examination.*—Patient was of medium frame, skin dry, very pale, freckled and inelastic. There was a small amount of panniculus. The hair was scanty and gray. Height five feet eleven inches, weight 122 pounds. The pupils were equal and reacted to light and accommodation. The teeth were very poor, the gums were red and spongy, the tongue fissured, moist, glossy and tremulous. The mucous membranes were pale. The neck was symmetrical and the thorax of good length, breadth and depth. The clavicles were prominent. The apex of the right lung was lower than that of the left and there was relative dulness on the right. Over the dull area there was weakened vesicular breathing with prolonged and slightly blowing expiration. No adventitious sounds. Remainder of the lungs negative. The apex of the heart could neither be seen nor felt. The cardiac dulness was not enlarged. The first sound at the apex was weak but clear. The second sound was relatively louder and more abrupt. The second pulmonic was weak, distant and impure, and the second aortic was clearly heard. The pulse was full, quick, of good tension, and regular. Examination of the abdomen showed it to be pale, inelastic, walls lax and ribs and crests of the ilia prominent. Palpation negative. The prostate was enlarged, the right lobe being somewhat larger than the left.

*Blood Examination.*—Red blood cells, 2,220,000; white blood cells, 6,800; hemoglobin, 42 per cent (Miescher). Differential count of 500 cells. Small lymphocytes, 40.4 per cent.; large lymphocytes, 2 per cent.; polynuclear neutrophiles, 50 per cent.; polynuclear eosinophiles, 5.4 per cent.; mast cells, 0.6 per cent.; degenerates, 1.6 per cent. Many macrocytes, microcytes, poikilocytes and oval cells. No nucleated forms seen.

*Urinary Findings:* 24 hour specimen, 1025 c.c.; specific gravity, 1.017. Acid. Color pale yellow. Tests for albumin and sugar negative. The small sediment contained a few leucocytes, epithelial cells, and a few round granule cells. No casts.

*Fecal Findings:* The stools were small, thin and watery, brown, containing mucus in small flakes. No occult blood. Microscopically a few undigested meat fibers and starch were seen. No cells and no parasites found.

*Test Meals:* These showed an absence of hydrochloric acid. Total acidity low. Rapid motility. Low peptic digestion. No lactic acid. Microscopically a few short motile rods with curved ends.

*Treatment.*—The patient was put on "anemic diet," consisting of eggs, raw beef and two-hour liquid feeding. He was

1. Cunningham (John H.): Ann. of Surg., February, 1907.

given 10 grains of tannigen after each evacuation; a mild diuretic; Blaud's pills in increasing doses, which was soon changed to Fowler's solution. He soon began to improve and progressed steadily. His blood became better so that at the end of a month the count was as follows: (February 11.) Red blood cells, 3,000,000; white blood cells, 3,600; hemoglobin, 56 per cent. The differential count showed small lymphocytes, 50 per cent.; large lymphocytes, 2.5 per cent.; polynuclear neutrophiles, 32.5 per cent.; polynuclear eosinophiles, 10 per cent.; mast cells, 0.5 per cent.; degenerates, 4.5 per cent. Though no nucleated cells had been found before this, they were now quite numerous. Normoblasts 13, megaloblasts 111. Many polychrome cells and a few stipple cells. A few days later the patient noted difficulty in urination. Burning sensation on passing and having to pass small amounts at frequent intervals were complained of. This continued for two days, when, on February 15, it was found necessary to catheterize the patient and withdraw a considerable amount of residual urine. Rectal examination at this time revealed, as has been previously described, an enlarged prostate, the right lobe particularly in this instance feeling soft. Immediately after withdrawing the urine the blood count was made. Red blood cells 1,710,000, hemoglobin 22 per cent. This was the first instance that we had in this case of an exacerbation of the anemia, associated with retention of the urine. The only marked change in the differential count was an increase in the eosinophiles, which rose to 15 per cent., the neutrophiles falling correspondingly. Nucleated forms were about the same as on the previous examination. The patient improved during the next few days, urinated freely, and except for weakness occasioned by the anemia, felt as well as previously. His blood remained about the same. The red count did not rise above that made on the 15th and the hemoglobin persisted at 22 per cent. The lowest red cell count was 1,040,000. On the evening of February 19, he again complained of severe pains in the lower part of his abdomen. He was restless, picked at the bed clothes, attempted to get out of bed, talked continuously, and showed other signs of active delirium. He had not urinated for eight hours. An examination of the abdomen revealed a distended bladder extending a hand's breadth above the pubis. The patient was catheterized at this time and 400 c.c. of dark yellowish-red urine was withdrawn. Examination of this urine was as follows: Specific gravity, 1.017, clear and acid. No albumin, no sugar, no bile-coloring matter. Strong test for urobilin. Sediment contained blood cells, some leucocytes, and a few round granular cells. Unfortunately a spectroscopic examination was not made. A blood count made immediately after the catheterization showed the second enormous drop that had occurred in the course of the disease. The red cells were 740,000, and the hemoglobin was 19 per cent. From this time on until his death, February 23, the count remained practically the same.

Dr. Cunningham, in his conclusions, argues that the relapses of the anemia brought about the "weakness of the general muscular system of the bladder wall," which "lost its contractile power and retention of urine resulted." To my mind another factor was at work in both of our cases influencing both the exacerbations of the anemia and causing in part the retention. Prostatic hypertrophy brought about retention of the urine in both his and my own case, following this an absorption of the hemolysins occurred and remissions in the blood count resulted.

Sudden and rapid variations in pernicious anemia have been noted under many conditions. Not alone alterations in the differential count and the occurrence of nucleated showers, but changes in the red cell count and hemoglobin content frequently occur. Physiologic influence and secondary infections are the most usual causes in the daily variations in proportion between mono- and polynuclear white elements. Megaloblastic showers are regarded as an attempt on the part of the bone-marrow cells toward regeneration of the red cells. At the same time the clinician has looked on these floods of megaloblasts as a signal, prognostic of dissolution soon to follow. Diminution of the red cells and hemoglobin, slowly and with no attempt at regeneration, with slight but appreciable daily decline, marks the progressive pernicious case. And *vice versa*, gradually increasing count after the ebb has been reached, with no other features than a steady rise in the count and a tendency on the part of the red elements to assume uniform shapes, signifies regeneration and convalescence. Remarkable increases in the hemoglobin and gains in the red cell count are so rare that their occurrence due to bone-marrow activity must be regarded with suspicion. Usually circulatory disturbances or faulty technic explain them. Sudden and distinct reduction in hemoglobin and drops in the red cell count are not so uncommon. They result from a variety of influences. Secondary infections cause the largest and most sudden drop in the red count. Especially is this effect seen resulting from septic infections. Excitement, increased mental activity or excessive physical exercise is followed at times by such remissions. There are times, however, when rapid fall in the blood content of the body can no more be accounted for than the disease itself. These idiopathic changes must be closely related to the primary causes of the anemia, for it seems reasonable that a rapid hemolysis can occur only when an excess of those hemolysins that produce the blood changes are in circulation.

Morris examined the urine of several cases of pernicious anemia along with the urines of other chronic and a few acute infectious diseases for hemolysins. He used 10 c.c. of urine and 10 drops of a 5 per cent. solution of blood (rabbit) which had been defibrinated and washed free from serum. After incubation for two hours at 37 C. and then standing at 0 C. for 24 hours the specimens were examined macroscopically and spectroscopically. There was positive hemolysis in all cases of pernicious anemia at various times during the examinations; also hemolysis in hypnotic urines. In all other cases hemolysis was negative. It is evident from this that certain substances are excreted by the kidneys in pernicious anemia that have some hemolytic action on the blood. That these substances also circulate in the vessels of patients with pernicious anemia is evident from the work of Niesser,[2] Ascoli,[3] Halpern,[4] Ford and Halsey[5] and others.

McCaskey[6] found in a case of typical pernicious anemia a large amount of xanthin bases which "held in a one-twentieth of 1 per cent. solution made isotonic for blood exerted a positive but slow destructive effect *in vitro* on normal erythrocytes." These, he thought, were in much greater concentration in the urine than in the blood.

It has been disputed whether or not hemolysins were a part of the blood serum. Maraghano,[7] in 1892, showed that hemolysis in anemia was due to isolysins of the serum rather than disease of the blood-forming organs themselves. Ford and Halsey[5] have shown that hemolysis takes place when normal blood is subjected to laked blood.

Warthin[8] maintained that the "hemolytic poison does not confine its effects to the portal areas, as claimed

2. Berl. Klin. Wochschr., 1901, 593.
3. Münch. Med. Wochschr., 1901, 1239.
4. Berl. Klin. Wochschr., 1902, xxxix, 1121.
5. Jour. of Med. Research, May, 1904.
6. New York Med. Jour., Nov. 24, 1906, p. 1030.
7. Cong. f. Innere Med., 1892, p. 152.
8. American Jour. of Med. Sci., 1902.

by Hunter, but is present in the general circulation. . . . The hemolysin of pernicious anemia does not differ in kind from that occurring normally or in certain diseased conditions. The difference is one of degree only." It seems evident from the above that when a retention of urine occurs in pernicious anemia that those substances or hemolysins which fail to be excreted are, in part, retained in the general circulation and, in part, reabsorbed into the body from the urinary tract. That these substances may cause a hemolysis, such as was observed in this case, is plausible, and that their continued retention may give rise to frequent remissions in the course of the disease is a logical conclusion.

Intermittent or cyclical hemolysis is the rule in pernicious anemia. Consequently when the poison that is normally being excreted from the kidneys is added to those already active in the circulation increased hemolysis is to be expected.

Whether this substance is a part of the serum itself or a toxin circulating in the blood requires further investigation. As mentioned above, there are many diseases in which a higher degree of hemolysis can be demonstrated in the blood serum than in pernicious anemia. In none of these, however, could Morris[9] find hemolytic properties in the urine, unless there was a hypotonicity in the urine. This is interesting in the light of certain theories that are advanced as to the cause of pernicious anemia. The view of Hunter[10] as to the cause of pernicious anemia—that the small intestine is the site of a specific infection whose toxin acting in the portal system alone causes hemolysis—needs further explanation. The recent work of McCaskey,[6] though alluring, is inconclusive, in that only one case of the kind has been examined. Moreover, we do not know the amount of xanthin bases that may be present in other diseased states, nor the amounts that may be excreted by a healthy individual.

Another question that presents itself is whether or not all the erythrocytes that are destroyed at the periods when the cyclical hemolysis occurs undergo dissolution in the spleen and other hemolymphatic structures? It would seem as if hemolysis could occur in any vascular channel of the body, providing a hemolysin or toxin were present. This would liberate blood-coloring matter and, as stated above, the laked blood could exert an additional hemolytic action. Whether the hemoglobin from the blood cells, that could be broken down in this manner in the general circulation, is first carried to the liver, spleen and lymph glands, and then excreted as urobilin or whether it is excreted directly after having been changed to hemochromogen, has been investigated, but without uniform results. If the hemolysins act in the general circulation, it is probable that the red cells are disposed of in both ways. It must be remembered in this connection that the larger part of the blood passes through the portal system, and then through the liver and spleen, before it reaches the kidneys through the systemic circulation.

These two cases have suggested new problems that might be undertaken with profit—the constancy of hemolysins in the blood in pernicious anemia and in the urine, together with their relation both qualitatively and quantitatively; the absorbability of these substances, and the presence of products of hemolysis in the urine. There is need also of a method for estimating hemolysins whereby uniform results may be obtained.

9. Morris: American Jour. of Med. Sci., 1904, p. 1026.
10. Pernicious Anemia.

## THE FIELD WHEREIN THE WORK OF THE SURGEON APPROACHES THAT OF THE PHYSICIAN.

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OMAHA.

Cases in which a reasonable doubt exists as to the propriety of an operation are met sufficiently often to warrant their consideration.

### THE SURGEON AND THE PHYSICIAN.

The training, character of practice and experience of the general surgeon differ in a measure from those of the internist—their observations being made from a different point of view, but their conclusions, when based on all of the evidence, should agree.

The experienced surgeon possesses an advantage from his opportunities to inspect and to palpate the living tissues and to study the pathology in its various degrees of severity and stages of progress and to compare such findings with the pre-operative symptoms. Repeatedly thus to study the symptoms before operation, and to check up the findings revealed by the exploration, contributes in the most practical way to the development of his judgment.

The relatively greater experience of the internist in his study of chest lesions is an aid to his interpretation of upper abdominal diseases, and from greater refinement in percussion, more accuracy in estimating blood pressure, and more experience in making blood examinations there accrues valuable clinical data for his consideration.

Beyond the question of diagnosis there is room for team work in planning the treatment. Some good surgeons develop into therapeutic nihilists, and some good physicians are tardy in recognizing the limits of medical therapy. Their combined efforts toward reaching a humanly correct diagnosis in the obscure case needs to be supplemented when an operation is begun by the utmost exercise of judgment in deciding on how much to do and in determining what supplementary aids will be most valuable in the after management.

### AIDS TO SURGERY.

At this period it is not necessary to refer to certain scholastic clinical pictures in illustration, but they afford a good opportunity to introduce borderline cases; for example, plastic repair in gynecology, when done for the more minor lesions, must not be expected to correct an existing gastroptosia or to benefit an atonica gastrica or to cure what is often the major feature of the case, malnutrition depending on secretory deficiencies or mechanical displacements of the digestive organs, with a pretty generally co-existing mucous colitis.

If lacerations need repair, and the proper anatomic position of the uterus requires surgical restoration, let this be accomplished neatly, selecting that form of surgical replacement indicated in the particular case, but the aid of an abdominal support, and particularly a study of the feeding of the patient, will probably outweigh the operative steps in contributing to complete convalescence in this class.

The wishes of the patient or of the family must be final in deciding on an operation, but ours is the duty to mold opinion, and particularly must there be reserved abundant latitude to exercise our judgment as to the extent of surgery done, based on the exigencies of the case and their relation to the powers of resistance.

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A promise to do everything that is necesary in order to avoid a second operation should not be made, as this might clearly invoke unjustifiable risks to life, but permission should be given the surgeon to correct a co-existing lesion uncovered by the exploration when the risk of such procedure is but reasonable in degree. In weighing these problems, the surgeon will have much satisfaction if the support of the attending physician has been expressed in council.

### UNUSUAL CLINICAL TYPES.

Unusual expressions of pain often require most faithful efforts for correct interpretation, e. g., a condition so remote from the pelvis as a weakened anterior arch of the foot may produce lumbar or pelvic distress from faulty habits of walking or standing. In verification complete relief has been seen to follow an appropriate support for the transverse or for the posterior arch of the foot.

On the other hand it was once my experience to investigate carefully the cause of a persistent and practically disabling pain radiating from a point near the middle of the crest of the ilium, for which the patient was wearing an elevated shoe. The local symptoms, however, were so impressive of an abscess, probably having origin from a deeply situated appendix, that an operation was advised and tardily accepted. A small abscess with thick protecting walls surrounded the tip of an appendix which lay almost entirely behind the peritoneum. It was clear that this abscess had existed for a considerable period. The high shoe has given no relief. In relating this case to a well-known orthopedic surgeon, he rejoined that he had once been called on to treat a case of sacro-iliac disease, for the relief of which an ovary had been previously removed by a gynecologist.

Recently the surgeon has been given greater latitude by the physician in dealing with cases wherein the sufficiency of the kidney has been in question, but this lesson, however useful for the future, has been learned at the expense of overdoing decapsulation.

### THE REAL BATTLE GROUND.

It is in the proximal right quadrant of the abdomen that the greatest difficulties in diagnosis are encountered. The anatomy is complex, functional activity is great, and a pathology beginning in one organ involves the contiguous tissues producing interdependent symptoms difficult to analyze, and the costal arch interferes in a measure with the usefulness of the surgeon's most reliable sense—palpation.

The outlines of the stomach are easily demonstrated, its mobility readily tested, and constrictions at the pylorus are easy to interpret—ulceration recognizable from fairly definite symptoms or by repeated examinations of the dejecta for blood; but infections extending through the duct of Wirsung to the pancreas or through the common duct to the liver cell and gall bladder are responsible for a pathology so variable in extent and degree that, in my opinion, there is opportunity for the exercise of the best talents of both the physician and the surgeon in making a diagnosis, and there is need for supplementing the surgical treatment with therapeutic aid of a medical and dietary type.

Gallstones are incident to long-standing, low-grade infections. They become recognizable from influences which are mechanical, and their removal is generally called for by a condition so excited. The removal of the gallstones is essential for relief when they have become mechanically troublesome, but the real benefit comes from the drainage of the bile ducts and liver cells. If we admit that drainage may be influenced favorably by dietary and medical aid by acting on the gastroduodenal mucosa, there remains at least a preventive field for the internist.

The final word concerning gallstones is yet to be spoken. That they are common, that they may exist without symptoms, that they may develop, be evacuated through the ducts and bowel and not re-form, at least for a period of years, is accepted. The last analysis, however, as to their bearings in heightening an infection, their relation to malignant disease, the amount of pancreatic disease secondary to their existence, and particularly their differentiation from diseases in contiguous organs, are the problems remaining for further investigation and more complete solution.

### ILLUSTRATIONS.

In 1900, during convalescence from an operation for pelvic repair, Mrs. C. suffered from an acute biliary attack, with rigor, fever and jaundice. An examination of the stools revealed gallstones and an operation for drainage of the gall bladder was considered, but not thought to be urgent. No further attack was experienced, and about the middle of 1906 it became necessary to remove an acutely inflamed appendix, at which time the gall bladder and ducts were carefully examined. There was an adhesion of omentum to the fundus of the gall bladder, but the gall bladder was normal in size, easily emptied on pressure, no stones existing in the ducts. This case illustrates immunity for six years after a clear attack of gallstone colic and their recognition in the stools.

In 1902, at the termination of a difficult removal of a large, adherent multilocular ovarian cyst, the gallstones were detected in the gall bladder. The condition of the patient did not warrant their immediate removal. This patient has been under observation since that time and has had no symptoms referable to the bile tract.

In disease of the upper right quadrant of the abdomen four conditions, primarily and in a major degree, require the care of the diagnostician (Richardson). These are gallstones, gastric or duodenal ulcer, cancer of the stomach and functional diseases. Of these, functional diseases represent by far the greater number of cases. Chronologically, malignant diseases will appear latest and gallstones next, but the age can not be regarded as important in determining the probabilities, at least between functional diseases, gallstones and ulcer. More important is the character and degree of pain, the period of its occurence, the amount of constitutional disturbance and its amenability to medical and dietetic treatment.

In gallstone pain, as in the pain of extra-uterine pregnancy, there is a wide range as to degree, but it is usually found that some particular attack has been sufficiently severe as to call for some prompt measure of relief, and while these attacks of pain are thought to be provoked by dietetic indiscretion, yet the pain will be found less rhythmic in its relation to the ingestion of food than is the rule in functional diseases.

### JAUNDICE.

In gallstones it is well to remember that jaundice is present in a minority of cases, probably in about one-fifth, and it is usually important to observe that while its presence strongly suggests gallstones, yet the color in

pernicious anemia, in hypertrophic cirrhosis and in syphilis of the liver, not to mention that found in primary malignant disease of the ducts, must account for a number of cases of apparent jaundice, even though the tint in these diseases is, in a measure, characteristic.

### CANCER.

Unfortunately, malignant disease of the stomach has no early pathognomonic symptoms. The usual location for the early development of the malignant disease is the cicatrix of an old ulcer, but its extension involves the submucosa primarily, and there is no ulcer to produce pain, and insufficient deposit to produce stricture or to impair the mobility of the organ in the early stages; therefore, recurrent spasm is not an early symptom. It is a disease, therefore, which we must diagnose largely from symptoms that are unobtrusive, but which fail to yield to the treatment which would favorably influence functional diseases or ulcerative changes in a reasonable time. Pain is not an early symptom, and to wait for vomiting of blood, great loss of weight, palpable tumor and cachexia or for the eyelet of the stomach tube or the test meal to reveal characteristic cells or, finally, to place any substantial dependence on the presence or absence of acid, is to clearly pass the period when curative treatment is possible.

Among the less frequent affections in the upper right quadrant of the abdomen, it has been my experience twice to encounter tubercular peritonitis, locally and primarily involving the peritoneum about the pylorus and gall bladder. In one the symptoms resembled malignant disease of the pylorus on account of the mechanical obstruction and loss of weight. In the other the symptoms were those of cholecystitis, which recovered after drainage of the infected peritoneum about the gall bladder.

Supra-umbilical hernia as a cause of pain, referable in my experience to the neighborhood of the left costal arch and uninfluenced by a treatment directed toward the digestive organs, yet sufficiently severe as to be at times disabling on account of the increased pain following physical exercise, is frequently overlooked. This doubtless is due to the fact that it is comparatively uncommon, it may exist without causing any symptoms, and hence might be regarded as an innocent lesion, and the protrusion may be so small as to escape any except the most painstaking research. In the majority of cases it requires operative treatment for its relief. Occasionally it will yield to the accurate pressure of the adhesive plaster-cork support.

In the consideration of these diseases the degree of pain, the period of its occurrence, the direction of its radiation, its amenability to treatment, the amount of constitutional symptoms, the feel of the overlying muscles in the hand of the surgeon, the question of probability, and the ability to think of the unusual diseases which might resemble the clinical picture before us, must be weighed. At the same time the individual must be studied and his method of narrating his symptoms analyzed for the purpose of eliminating what is unimportant, yet to cross-examine on what is important, recognizing the symptoms to be typical or atypical before the final analysis is made.

**Naming of Carbon Compounds.**—Esters are compounds in which the hydrogen ions of acids, organic or inorganic, have been replaced by organic radicles, thus acetic acid, $CH_3COOH$, and ethyl alcohol, $C_2H_5OH$, form $CH_3COO$ $(C_2H_5)$, acetic-acid-ethyl-ester or ethyl acetate.—*Pharm. Rev.*, August, 1906.

## THE STATE BOARD AND THE COLLEGE DIPLOMA.*

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One of the most interesting and significant features in the development of modern medical education is the relation between the state medical examining and licensing board and the medical school. As has been shown elsewhere,[1] there is reasonable ground for the belief that the state board sprang only from a soil mulched with the product of the decadent medical school. To put the point more bluntly, had the medical school done its full duty, there would never have been need of the state board; for the diploma of such a school would have satisfied all registration requirements. It must be conceded, therefore, at the very outset, that the state board begins its functions with a natural, not to say genetic, prejudice against the medical school *per se*.

In the prehistoric days of the profession, before the rise of the schools, its neophytes were the accredited apprentices of recognized practitioners. With the evolution of the healing art, it was found that mere empiricism was but a poor guide, that underlying all vital activities are certain fundamental laws and principles, certain necessary sequences of cause and effect, which, mastered, give man a certain more or less complete control over the ills to which he is heir. The knowledge of these fundamental laws and principles, of these sequences of cause and effect, constitutes the science of medicine. It was early apparent that no one man, busied with the claims of his patients—the more numerous, the greater his skill and fame—could impart to his student that full knowledge which would make him the worthy bearer of his preceptor's cloak. Hence it came about that two or three, or more, combined to give their students the benefit of their combined experience. Had each one but covered the same ground, the gain would have been merely quantitative, not qualitative. As elsewhere, throughout the organized world, development is marked by a differentiation of labor and a consequent specialization of function. The evolution of the physicist, the chemist, the anatomist, the physiologist, the pathologist, forms but a part of the evolution in the general history of civilization. As time went on, the medical profession came to be recognized as one of the learned professions, and its privileges and emoluments as something to be sought in themselves. The diploma, which conferred on its holder a right to these privileges and emoluments, came to have a value which tended to overshadow the duties which it imposed; and then, by easy stages of degradation, it became in many instances the mere commercial product of the diploma-mill. Then, and only then, did the public, recognizing the utter inadequacy of the diploma in itself, as a guarantee of capacity and ability, seek to protect itself by interposing between itself and the body which confers the diploma a disinterested board whose function it is to test the qualifications of the applicant for licensure.

The powers of these boards would seem to be sufficiently recognized and established; their duties are evolving with the progress of events. It will, perhaps, be universally admitted that some evidence of preliminary training should be submitted before the candidate is admitted to examination by the board; and that hitherto

* Read at the Sixteenth Annual Convention of the National Confederation of State Medical Examining and Licensing Boards, Boston, June 4, 1906.

1. THE JOURNAL, June 3, 1906.

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the diploma has been at least the most convenient form of such evidence. Owing to the conditions just outlined, it has become necessary to discriminate between these diplomas and, in some instances, against certain institutions granting them. An indication of the former need is seen in the unanimous opinion of the Supreme Court of the United States, delivered Jan. 14, 1889, in the case of Dent *versus* the State of West Virginia. Speaking of the qualifications of the physician, Mr. Justice Field said:

> Reliance must be placed on the assurance given by his license [not diploma] that he possesses the requisite qualifications.

Of the latter need there is evidence in the laws of the various states, wherein schools are referred to as of "good standing," "recognized," "reputable," etc. In the light of Judge Toney's significant definition (Nelson *versus* State Board of Health of Kentucky) it may be argued that the word *reputable* best suits the needs of the state board and should find its place in every licensing act. Says Judge Toney:

> The word "reputable," as used in the statute, applied to a college—an institution of learning—has a different meaning from what it has when applied to an individual. When applied to an individual, the adjective "reputable" has reference to his moral character, to his character or reputation as an honorable man, *i. e.*, to his integrity and good character; but when applied to a college, the word *reputable* has reference to the extent of its course of sessions; that is, to the period of study required for graduation—to the thoroughness of the education required at such college—to the thoroughness of the course or courses of science prescribed and taught in said college, and to the capacity and qualifications of the teachers therein, and to the standard of scholarship and proficiency in said sciences required of the students as a condition precedent to the issuing of diplomas to them as graduates thereof.

Again, said Chief Justice Strahan, of the Supreme Court of Oregon (William Barmore *versus* the State Board of Medical Examiners):

> As a part of the current history of the times, and as an aid in arriving at the legislative opinion, when there were different kinds of colleges authorized by the laws of the states in which they were located, in which there were pretended annually to be delivered full courses of lectures and instruction on the arts and sciences professed to be taught, that were not reputable, because they graduated students for money frequently without regard to scholarship, a diploma from such an institution afforded no evidence of scholarship or attainments of its holder. It was a fraud and deserves no respect from anybody, and it was against such diplomas the law was intended to protect the public, and, therefore, required the colleges to be *reputable*. Whether a college be reputable or not is not a legal question, but a question of fact.

Once more, said Judge Given ("The Eclectic College Case," Supreme Court of Iowa, May, 1893):

> The standing of the college, as contemplated by this statute, is rather what the college is in respect to the thoroughness of its courses than what it is reported to be.

Unfortunately, what a college is is not always to be learned with certainty from its official publications. In a paper read March 19, 1906, at the sixteenth annual meeting of the Association of American Medical Colleges, one of the delegate members said:

> Until the medical colleges of this country can bring themselves to tell the truth in their catalogues they must not expect to receive any great confidence.

At the same meeting another delegate said:

> The degree of doctor of medicine does not always represent what it should represent. The very existence of examining boards is evidence of the fact that all medical colleges can not be relied on. There are men engaged in educational work—in secondary education and in professional education—who must be watched. That being the case, the examining board comes into existence, and the examining board needs information.

And now a few illustrations; the data furnished are drawn from material, most of it in print, and all of it at the disposal of this conference.

Last fall the secretary of the State Board of Colorado sent a letter of inquiry as to the status of the Eastern University of Washington, D. C.; with this was enclosed a wretchedly printed announcement of the institution aforesaid, which proposed to give full courses in the arts and sciences, in theology, medicine, dentistry, pharmacy, etc. No such institution was registered in the office of the commissioners of the District of Columbia. None of the faculty was to be found in the city directory; indeed, no local habitation was mentioned in the printed announcement. The matter was at once placed in the hands of the superintendent of police, who detailed a detective to look into it. Investigation developed the fact that all mail addressed to the Eastern University of Washington, D. C., was delivered at the office of an attorney in the city who, it is understood, makes a specialty of incorporating organizations of various kinds under the laws of the district, and by him forwarded, unopened, to a postoffice box in Philadelphia. Again no local habitation was given, and the sumptuous lecture halls and well-equipped laboratories of this institution were—and still are—hidden under the ample cloak of "Uncle Sam's" mail. The next inquiry was made of the General Postoffice Department, whose inspectors chased this specter out of the City of Brotherly Love and into New York and—back to Philadelphia! Repeated inquiries have failed to bring any more definite information. The health officer of the district, who was secretary of the Board of Medical Supervisors, the police department of the National Capital and the Postoffice Department of the United States Government seem alike unable to answer questions. No doubt, more than one member of this confederation has asked where and what is the Eastern University of Washington, D. C. While there is little doubt that any but the most unsophisticated would give credence to the pretensions of such a mere paper diploma-mill, the fact that it can so freely use the mails and so easily escape detection and localization is significant.

If there be any city in the country where a night school of medicine might find a reasonable excuse for existence it is, perhaps, the city of Washington. The offices of the several governmental departments swarm with ambitious but underpaid clerks, many of whom work at their desks from 9 until 4:30, and many others seek to profit by the much-vaunted educational advantages of the National Capital from 4:30 until 9. Whether or not it is possible thus to serve two masters, without slighting the work of one or the other, it must, in sheer justice, be said that many able and capable men have entered the profession by this route. To-day, however, when the medical curriculum cries aloud for more time and for the undivided attention of its followers, it is more than doubtful whether such a combined course can be followed either with safety or with profit. Could the medical course in such a school be extended to five or six years, the last year being devoted unremittingly to clinical work and, of course, in the daytime, but little criticism could arise. Competition, however, is so keen that the medical school which could not turn out an M.D. in four years at most would have scant patronage.

On the other hand, the fiat has gone forth that the

night school must be abolished, and in answer to the pressure thus brought to bear we find in one catalogue this rather unique announcement in bold face type:

TWO COURSES OF LECTURE, LABORATORY AND CLINICAL WORK WILL BE GIVEN DURING THE YEAR, THE ONE BEGINNING DAILY AT 9:30 A. M., THE OTHER AT 4:30 P. M. THE STUDENT MAY SELECT EITHER COURSE.

It has been impossible to secure a printed schedule of these courses, for the reason, it is understood, that none has been printed! On the bulletin board, however, we may see lectures scheduled at 8 a. m. and then—a vast and significant vacuity until the mystical hour of 4:50 p. m. True, in the first year, the anatomic laboratory is open from 9 to 12; the physiologic laboratory, thrice a week, and the chemical laboratory, twice a week, from 2:20 to 4:50. In the second and third years there is pathology from 1 to 4 thrice weekly; in the third year there is physical diagnosis from 1 to 2 twice weekly, and in the third and fourth years a recitation in gynecology at 1 o'clock on Thursdays, but the bulk of the work is crowded, in each year, between 4:50 and 10:30. This school did not take kindly to the rule that preliminary education is to be passed on by the state authorities, or at least not by the faculty of the medical school. Its dean asserted with some warmth that, of course, his school would reserve the right to pass on the qualifications of its own matriculants.

In reviewing the obstacles to further progress, in the cause we here represent, the chairman of the Council on Medical Education of the American Medical Association said last year:

**A second obstacle, and one of great moment, is found in the medical colleges which are conducted as private corporations. There can be no longer any excuse for the existence of a medical school which is conducted by a body of men for profit. It is only necessary to state the demonstrated fact that it costs more to furnish a student with a medical education than he pays for fees to show conclusively that a school supported solely by the fees of the students, and which pays a profit to its owners, is doing poor work and has no warrant for existence. Fortunately, with the increase of requirements, especially for preliminary education, these medical schools will be forced either to seek endowment or absorption by universities which will enable them to do acceptable work, or else they will be condemned to extinction by the law of the survival of the fittest.**

Let us consider, for a moment, a school of this type. The connection between a certain other university and its medical school might be called a *mariage de convenance*. The president of the university is, *ex officio*, president of the medical faculty, but the latter is practically autonomous; its treasurer disburses all funds on the order of the faculty or its duly authorized committees, and these committees are appointed by the vice-president, who is, of course, a medical man. There is no endowment and the dividends of the professors are determined by striking a balance between the total fees received from students and the total running expenses of the school.

In THE JOURNAL you will find what was said to be its curriculum "in force during the session of 1903-1904." A few stray items are not only illustrative but interesting. In the first year we find twenty lectures and twenty hours of laboratory work assigned to physics. There was not then, and there is not now, a physical laboratory in this medical school; nor did the class have any laboratory work at all in physics. Seventy-five lecture hours are assigned to physiology; the class actually had fifty-two recitations. Forty hours' laboratory work are assigned to physiology in both first and second years. As a matter of fact there was no physiologic apparatus worthy the name until the opening of the following session and absolutely no laboratory. The first class to have laboratory work in this school had twenty-five hours for each student during the session of 1904-1905, and the equipment consisted of two scant sets of the Harvard physiologic apparatus, increased in the summer of 1905 to eight sets.

If a committee of this confederation will take the time and trouble to compare the data given in the annual "Educational Number"[2] of THE JOURNAL with the catalogues and lecture schedules of some of these institutions, it will find some "mighty interestin' readin'."

Let us see something of the quality of the output of such a school as shown by a few extracts from examination papers:

**The red blood cells, through their property of holding in combination oxygen for the nutrition of the body, carrying it to every part of the organism from the air cell walls of the lungs and returning carbon dioxid constitute the external respiration.**

On the function of the vasomotor nerves, we have this statement:

**The pressure is increased or diminished by thease nerves—the nerves are a part of the symphetic nervous system and have their center in certain ganglia situated on each side of the spinal cord in the main chain of the symphetic system.**

**Foods may be absorpted in any portion of the alimentary canal after dijestion but the great majority enter the blood through the walls of the stomach and the small intestine. They enter as simple sugars, the starches having undergone a hydrolytic process, or as peptones and albiminoses, as inorganic salts and fats.**

This is from a graduate of 1903, though you will not find his name on the printed commencement program of that year, and he is to-day unable to pass the local board of examiners.

By consulting the reports published in THE JOURNAL since Jan. 1, 1906, you will find there recorded to the discredit of this same institution four failures in Connecticut, three in the District of Columbia and one each in California and Maryland. Last spring, out of a class of twenty-seven students of this school, fourteen were haled before the faculty for cheating in one of the final examinations. The commencement program shows that there were sixteen graduates in June. The "Announcement for the Session of 1906-1907," just issued, states that the degree of M.D. was conferred on twenty-five candidates in 1905; there is no hint as to how they were distributed throughout the year.

But why go further into details, which could be multiplied *ad nauseam* and probably from a much larger number of schools? It must be apparent that, especially in the unendowed schools, this condition is practically a commercial necessity. In order to pay dividends to the members of the faculty, these schools must graduate their matriculants. It is devoutly to be hoped that the newly aroused public sentiment, which is seeking to purge the atmosphere in the financial, political and social worlds, will permeate the professional world as well. Without the aid of public opinion, which is, after all, the court of last appeal in this country, we can do little or nothing. Meantime, however, we can at least be honest among ourselves. We know that the 4,000-hour schedule, over half of which is devoted to clinical and laboratory work, requires an equipment and personnel not to be found in these institutions. We

2. THE JOURNAL, A. M. A., Sept. 21, 1901; Sept. 6, 1902; Aug. 15, 1903; Aug. 13, 1904; Aug. 19, 1905; Aug. 25, 1906.

know, if from nothing else than the printed proceedings of its recent annual meeting, that even membership in the Association of American Medical Colleges is not a sufficient guarantee of good work, well and conscientiously done.

Better things will come, not through fear of the occasional visit of the peripatetic inspector, whose inspection must, of necessity, be hurried, superficial and all too brief. Better things will come only when the general sentiment is aroused by a general knowledge of the true state of things. We all know well where these desert spots are located on the educational map. Publicity is coming to be the very generally recognized antitoxin for the cancer of fraud. The comparative tables published in THE JOURNAL, together with the weekly reports of failures before the several state boards, can not but have a salutary influence.

But there is still another side to this question. Until the state boards be raked out of the muck of politics, until their examinations be raised above the mire of catch questions and mere memory tests, until these examinations be genuine tests, not of mere learning, but of knowledge, of capacity, of ability, of character, they will, some of them, be no more *reputable* than some of the colleges of which we have been thinking.

1841 Summit Place.

## CONTRIBUTION TO THE STUDY OF ERYTHEMA INDURATUM (BAZIN).*

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Besides those dermatoses which are known to be of tuberculous origin, like lupus vulgaris, tuberculosis verrucosa cutis and scrofuloderma, there are to-day numerous other skin lesions regarded as closely related to tuberculosis, if not entirely of tuberculous origin. One of them, lichen scrofulosus, the older Hebra regarded as associated with tuberculosis. He found that 90 per cent. of patients so afflicted were youthful individuals, with cervical and other kinds of lymphadenitis, periostitis, caries, necrosis, or affected with ulcerating scrofulodermata, symptoms which are characteristic of what we call "scrofulosis," making the name of lichen scrofulosus a proper one. In some inveterate cases of this disease acne-like lesions appear with or without pus formation. Hebra called them acne cachecticorum. He found it associated with a moist or dry seborrhea, causing the so-called pityriasis tabescentium. A third affection brought by him in connection with tuberculosis is chromophytosis. It appears with predilection in those phthisical patients who are affected with seborrhea and hyperidrosis.

### TUBERCULOSIS AND CUTANEOUS DISEASES.

A group of other skin affections more or less closely allied or even identical, but known under different names, have of late been brought into the domain of the octopus tuberculosis. These are: folliculitis exulcerans (Lukasiewicz) or hydroadenitis suppurativa (Pollitzer). Kaposi's acne telangiectodes, Barthelemy's acnitis and follicis, known also as papulo-necrotic tuberculides or necrotic granuloma (Johnston's). The sarcoids of Boeck, the pityriasis rubra of Hebra, synonymous with Besnier's tuberculous erythrodermia; the extremely rare angiokeratoma, the lupus pernio and, above all, the much contested lupus erythematosus, even sclerodermia and keloid are regarded as associated with tuberculosis. The erythema induratum Bazin is in a manner a very important exponent of this group, called by Darrier *tuberculides cutanées*. The fact that the important group of erythemas is due to autotoxins of gastrointestinal or other origin has led observers to assume that the enumerated group of skin lesions may also be of endogenic origin. This hypothesis was supported by bacteriologic as well as histologic findings.

It is interesting to follow the evolution of this group of tuberculides as derived from the classical tuberculous affections of the skin. The grouping of seemingly different disease forms into a system of common etiology is at first glance surprising. While lichen scrofulosorum, acne cachecticorum, as mentioned before, were thought to be associated with scrofulotuberculous taint, the real import of such a connection could at that time only be surmised, but not determined. The histologic researches of Jacobi,[1] who found bacilli in his two patients, and later of Gilchrist,[2] who found histologic features in lichen scrofulosus identical with the structure of the miliary tubercle, also Sack,[3] Boeck's and Hutchinson's[4] investigations, finding the same element in the disseminate form of lupus erythematosus, and finally the researches of Hallopeau Darrier,[5] Brocq[6] and others gave the impetus for further studies in this line.

We must look on the tuberculous taint as a predisposing cause or, rather as a favorable culture medium for the acquisition of different skin lesions. Unfavorable circulatory conditions in their wake may produce lupus pernio or angiokeratoma. But there certainly must be a more intimate association with tuberculosis in such lesions, in which, although the bacilli have not been found, histologic examination revealed tuberculous features. These are folliclis, Boeck's sarcoids, lupus erythematosus, etc. In a series of other lesions like lichen scrofulosus, Jacobi and more recently Wolff[7] have demonstrated tubercle bacilli, while Haushalter,[7] Pellizari[7] and others have reported positive inoculation results. Again in erythema induratum, although bacilli could not be demonstrated, yet Thibierge and Ravout,[8] also Carlé,[9] succeeded in obtaining positive results by inoculations.

These different results gave rise to two kinds of hypotheses as to the origin of these lesions. They are held to be due either to the toxins of the bacilli, located somewhere in the body, or to the bacilli themselves, dead or alive, which are carried to the skin by the blood current and there act as a morbific factor. The former are aptly called toxi-tuberculides and the latter bacilli-tuberculides.

### REVIEW OF LITERATURE AND PATHOLOGY.

It would exceed the limits of this paper to analyze the abundant literature on this subject. Briefly said, the theory of toxi-tuberculides has its main representative

* Read in the Section on Cutaneous Medicine and Surgery of the American Medical Association at the Fifty-seventh Annual Session, June, 1906.

1. Verhand. d Deutsch. Derm. Ges., Third Congress, 1891, p. 69.
2. Johns Hopkins Hosp. Bull., 1899, p. 84.
3. Monatsch. Pract. Derm., xiv, 1892, p. 457.
4. Arch. Derm. and Syph., 1898, xlii.
5. Annal. Derm. et Syph., 1892, p. 45.
6. Annal Derm. et Syph., 1897, p. 50.
7. Cited in Mracek's Handb. d. Hautkr., 1905, p. 262.
8. Annal. Derm. et Syph., 1899, No. 6.
9. Lyon: Médicale, 1901, No. 10.

in Klingmüller,[10] who supports his contention with the fact that injection of tuberculin has caused the appearance at the point of injection of lichen scrofulosus lesions and emphasizes his hypothesis by the lack of tubercle bacilli in the lesions, their acute onset, benignant course, discrete appearance, spontaneous involution and non-inoculability on animals.

In 1890 I saw such lesions at Schwenninger's clinic while he and Buzzi were experimenting in the early days of Koch's tuberculin. At the same time I also witnessed the so-called local and general reaction take place in established cases of lichen scrofulosus, also in some cases of lupus erythematosus. Unfortunately with the disappointment at that time to find a "sure cure" in Koch's great invention for all cases of phthisis, gathered at Berlin in midwinter, these experiments were not pushed and were forgotten. In contradistinction, Mracek[11] holds tuberculides to be bacillary tuberculoses of hematogenic origin and fortifies this contention by the demonstrations of bacilli and positive inoculation results cited before. That the tuberculides as well as the classical tuberculous affections of the skin are both of hematogenic origin, with the exception of the inoculated forms *per extra,* is an attribute common to both. Neither does the inability to demonstrate the tubercle bacilli in the tuberculides vitiate against their being of tuberculous origin. Furthermore, we know how difficult of demonstration they are even in true tuberculosis and how rarely we succeed in inoculating experiments. From all these conditions common to both forms one can perceive that the class heading of tuberculide or tuberculosis of the skin is an arbitrary one. Among these tuberculides, erythema induratum Bazin stands in its relation to tuberculosis about third on the list, being preceded by lichen and acne scrofulosus and the papulonecrotic tubercle. In about more than half of the reported cases it was proven associated with tuberculosis. In extremely rare instances the bacilli were found in the lesions, especially by Wollf. In other instances inoculation on guinea-pigs proved positive (Thibierge and Ravout,[8] C. Fox,[12] Carlé[9] and Jadassohn[13]), while in other cases the tuberculin test in the patient proved positive (Mracek,[11] Mantegazza,[14] Hartung and Alexander,[15] Söllner[16] and myself). Histologic and bacteriologic examination also show different opinions. Audry[17] regards it as non-tuberculous; Leredde,[18] Thibierge and Ravout[19] hold it to be of tuberculous origin. The latter demonstrated the main changes in the vessels: endothelial proliferation almost to the point of occlusion; giant cells with peripheral nuclei and numerous epithelioid cells.

One of the most constant findings is the atrophy of the subcutaneous fat tissue into large cysts and transformation into connective tissue. The clinical picture of erythemia induratum is well characterized. Bazin[20] describes it as occurring in red hard nodes, paling at compression, tough or doughy to the touch and extending into the subcutaneous tissue. The formations do not itch and are only slightly tender on pressure. The affection is localized with predilection on the legs; anteriorly, on the calves and laterally. It is more frequent in girls than in boys. Neither Bazin or Besnier[21] nor recently Jarisch[22] alludes to any changes taking place in these nodes. They describe them as undergoing absorption.

Conditions became somewhat confused when Hallopeau and Leredde,[23] Hutchinson,[24] C. Fox,[12] White[25] and others reported ulcerating cases which greatly resembled scrofuloderma ulcerosum. Doubtless many cases of the latter have been taken as erythema induratum and *vice versa.* A non-ulcerating subcutaneous scrofuloderma occurring in young people and occupying the lower extremities is, indeed, apt to be confounded with the node of erythema induratum. I venture the opinion that these formations are so closely allied to each other that neither clinical nor histologic or bacteriologic differences can hold them apart without diagnostic artifices. Even the ulcerating form of erythema induratum has many similarities with ulcerating scrofuloderma, although I admit that the caseating undermined reactionless scrofulogummata with their extensive skin destruction will permit of some differentiation especially when it started from a lymph gland and much more so when on other parts than the lower extremities.

The localization of the lesions on the legs may be regarded as the classical feature of erythema induratum. Sluggish circulation, impaired *vis a tergo,* are the main causes of its appearance there and also of lupus pernio or simple pernio so frequently accompanying this trouble. While the disease almost exclusively affects females, yet in rare instances it has also been found in men, and, although it is most frequently met in adolescent girls and young women, yet of late it has been found in older women also. Johnston[26] found it in association of what is called to-day papulo-necrotic tubercle on the hands and forearms. He calls these affections paratuberculoses.

### DIAGNOSIS.

The diagnosis of erythema induratum Bazin has in a great measure been alluded to previously, out of which the picture of the disease can be construed without marked difficulty. These are the salient points: formation of subcutaneous deep-seated nodules, more easily recognizable by touch than by sight. They develop into hard deep-seated indurated nodes, not adherent to the skin at first, but becoming so later. The skin is at first purplish, then as the nodes become larger and work toward the surface it changes into a dull violaceous hue. In size they occur from that of a cherry or even double its size. They also occur on both sides of the Achilles tendon. Their cause is eminently chronic, their development and behavior tardy and of slow activity. In those rare instances when they break down, necrosis sets in on the summit of the node in one, rarely in several places, attended by a scanty seropurulent discharge. The final scaring and pigmentation is then not so pronounced as that of an ulcerous scrofuloderma.

### ETIOLOGY.

As regards their etiology, the association of erythema induratum in half of the cases with the tuberculous

10. Cited in Mracek's Handb. d. Hautkr., 1905, p. 263.
11. Handb. d. Hautkr., Wien., 1906, iv, p. 266.
12. Brit. Jour. Derm., August, 1893, p. 225.
13. Correspbl. f. Schweiz. Aerzt., 1899, p. 626.
14. Annal. Derm. and Syph., 1901, No. 6.
15. Arch. Derm., and Syph., 1902. lx; Med. Centrtg., 1904, iii; Arch. Derm. and Syph., 1904, lxxi, Nos. 2 and 3.
16. Monatsh. pract. Derm., 1903, xxxvii, p. 545.
17. Annal. Derm. and Syph., 1898, p. 209.
18. Ibid., 1898, p. 893.
19. Ibid., x, p. 513.
20. "Leçons sur la Scrofula," 1861, p. 146, and his other "Leçons," 1862 and 1868.
21. Annal. Derm. and Syph., 1889, p. 25.
22. Die Hautkr., Wien Hölder, 1900, p. 115.
23. "Dermatologie," Paris, 1900.
24. Smaller Atlas, 1896.
25. Jour. Cut. and Gen. Urin. Dis., 1894.
26. Ibid., July, 1899, p. 311.

taint, its occurrence chiefly in women sometimes also affected with circulatory disturbances, has been alluded to. In more than 50 per cent. of cases the tuberculin test proved positive. To reconcile this etiologic discrepancy, Whitfield[27] in 1900 and again in 1905 asserted, that there exist two well characterized types of the affection: a tuberculous and a non-tuberculous. The former, attacking young women, is of an indolent character and presumably due to the living tubercle bacilli; the latter, occurring in middle-aged women affected with circulatory disturbances, is of a rheumatic nature, more painful, prone to break down and not allied to tuberculosis.

CASE REPORT.

The following is the history of my case:

*History.*—Mrs. M. M., aged 26, Russian, married, has no children, no history of lues, but has mitral trouble. A nephew has a tuberculous taint.

Nine years ago, in *winter* of 1896, she noticed a lump on the inner aspect of the left lower leg. She was given a salve, which, in the language of the patient, "took out the inflammation." The lump eventually disappeared. In the meantime, however, several others appeared, one on almost the same spot, and another on the right leg. All of them disappeared

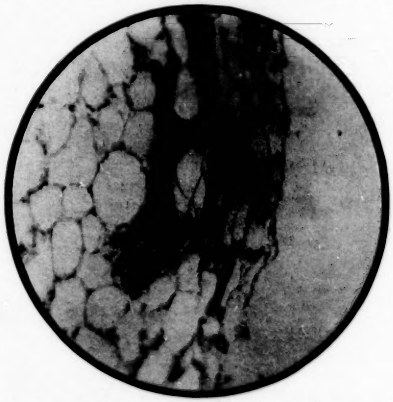

Fig. 1.—Interstitial connective tissue of the subcutaneous fat showing hyperplasia, new-formed connective tissue and new lymphatics.

in May, 1897. In the winter of 1897 lumps appeared again in about the same region, but not in the same situation. They disappeared in the summer of 1898. For five years no recurrence took place, when in November of 1904 lumps again appeared to the right and left of the Achilles tendon of the left leg and on the calf of the right. Patient could hardly walk and had to stay at home for a week. All lesions disappeared in May, 1905.

In November, 1905, patient alleges she left the house well, and in walking she noticed a "rushing, painful sensation" in her right leg, and when she reached home she noticed the appearance of the lumps(?) She particularly states, that she had always had pains in her legs before the appearance of the lumps. This time they appeared on the outer aspect of the right leg, others spreading over the front and back of the thigh, over the nates, and a few over the back and over both arms. Only slight tenderness on pressure.

*Examination.*—On examination I counted thirteen on the right and ten on the left leg, appearing as subcutaneous consistent tumors from the size of a split pea to that of half a walnut, and situated in the direction of the long axis of the body. As those on the lower legs developed, they worked themselves toward the surface and became purplish, without, however, any one of them breaking down. Those formations which were situated on the thighs and nates were invisible and could only be determined by careful palpation as deep, shot-like, hard bodies distributed in the subcutis. They were very painful, annoying her while sitting, but did not develop further. While under observation for over five months my

Fig. 2.—The formation of giant cells from fat cells.

associates and I noticed the spontaneous disappearance of the undeveloped ones first and of the others later.

A week's treatment with iodid of potash and salicylate of soda had no influence on them whatever, and as they had disappeared previously without any medication, nothing more

Fig. 3.—Inflammatory area resembling new growth.

was done. At the time of this report, May, 1906, there is no vestige of the affection left.

A review of this case of erythema induratum Bazin will show it to be a classical, as well as an extended example of the affection. Two etiologic factors are present, each of which plays a rôle as a pathogenetic factor. A young woman of otherwise healthy appearance with a

27. Am. Jour. of the Med. Sc., December, 1900, and September, 1901. Also Brit. Jour. Dermat., July, 1905.

congenital mitral affection, showing a slight stagnation hyperemia on both cheeks so frequent with heart affection, exhibits a sluggish chronic disease of *perennial* appearance and of the described qualities and peculiarities. The presence of a scaling lupus pernio (possessing almost the character of a lupus erythematosus) on four toes of the left and three of the right foot, extending over the metatarsal joints, is another important concomitant symptom so frequently mentioned by investigators. The *second* etiologic symptom is the positive result following the tuberculin injection. The patient had a stormy reaction; 24 hours later there was a temperature of 103 and a great deal of general disturbance. Inoculation on guinea-pigs taken from one of the excised formations proved negative.

The onset of the affection with pains, reported by Thibierge and Ravout, and Hartung[28] was present in a very marked degree. As to localization, I think this case showed a distribution of the lesions hitherto unobserved in the same patient. The occurrence of deep nodules *ad nates* has, to my knowledge, not yet been described. Close observation showed that they did not develop further and that none of the lesions broke down.

Fig. 4.—Giant cell with coarse protoplasm and vacuole.

The nearest approach to such a condition was a slightly doughy condition in the centers of the fully developed lesions. It is furthermore noteworthy that the formations would make their appearance in winter, then disappear and others reappear, the course of the whole process taking from four to five months ending with the approach of summer.

In this respect my case resembles that of Burns,[29] as regards the unusual number and distribution which suggested erythema nodosum, except for the long period it lasted, which is incompatible with the latter. The two cases of W. Pick[30] which he calls persistent erythema nodosum, occurring in two young women with no evidences of tuberculosis, have very much in common with both forms of erythema. There are undoubtedly transition stages between the different tuberculides. Acne cachecticorum seems to be a higher development of lichen scrofulosus. Certain cases of erythema nodosum, especially those which are coexistent with the lesion of erythema exudativum multiforme, cause visceral lesions so classically described by Osler; or in turn may be the effect of such systemic infectious diseases. In tuberculous meningitis this is frequently the cause and leads one naturally to consider the assertion of Uffelman,[31] Bäumler[32] and others who believe in the association of a pernicious form of erythema nodosum with tuberculosis, the patients mostly having been descendants of tuberculous parents. It may be that erythema nodosum and erythema induratum are only different stages of the same process, with a slightly varying etiology and pathology. There is another evidence of the admissibility of such hypothesis by the occurrence of one or more of these tuberculides on one person. These tuberculides or paratuberculoses as Johnston calls them, have transition stages. Lichen scrofulosus has been seen with erythema induratum, with the papulonecrotic tubercle or necrotic granuloma of Johnston,[26] with folliclis or cutaneous tubercle described by Macleod and Ormsby,[33] etc. It is probably better not to adhere too slavishly to disease headings, which sometimes are only the result of arbitrary divisions.

Fig. 5.—New connective tissue with epithelioid cells and giant cells resembling a tubercle.

The histologic features of my case are in harmony with the description of other investigators, but with slight deviations. An increase of the interstitial connective tissue framework (hyperplasia) (Fig. 1). An atrophic degeneration of the subcutaneous fat tissue (Figs. 2 and 3), and formation of giant cells (Fig. 4) with radiating nuclei and epithelioid cells (Fig. 5), and endothelial proliferation of the vessels were present. These changes in the subcutaneous fat tissue are only characteristic of tuberculosis when other concomitant symptoms bear them out. In my case the vessel changes were not so prominent as to produce thrombosis and, in a sense, this would vitiate against the theory of a hematogenic origin. But their absence could be explained by the fact that the very smallest capillaries might have been already destroyed by the fatty degeneration of the embolic plugs.

28. Arch. Derm. et Syph. lxxi, p. 385.
29. General Cut. Dis. incl. Syph., April, 1905, p. 177.
30. Arch. Derm. and Syph., lxxii, 1904, p. 360.
31. Deutsch. Arch. f. klin. Med., 1872, p. 76.
32. Deutsch. med. Wochschr., 1889.
33. Brit. Jour. Derm., 1901, p. 367.

DIFFERENTIAL DIAGNOSIS.

The transition forms of erythema nodosum have been alluded to. In a general way erythema nodosum can easily be differentiated from erythema induratum by the acute character and intensive systemic disturbances. Its lesions are more superficial, more painful and appear more suddenly, are of brighter color and more inflammatory in their character. They rarely, if ever, break down and their absorption takes place in a manner resembling the color changes of a fading contusion. Hence the name dermatitis contusiformis. Again, erythema induratum has a chronic course, as a rule does not, but may break down in a small number of cases, is not connected with the stormy systemic disturbances and yields a more evanescing pigmentation.

In differentiation from syphilitic gummata, which it resembles strikingly, I may mention, that gummata will never appear so numerously, neither will their appearance be attended by systemic disturbances. Again, a gumma will not exist for months without changing. If absorbed, it will do so by local or general mercurial treatment. The confusion with lepra, to which it bears a far-away resemblance, is not very imminent.

As the question of the tuberculides is as yet in a very undecided condition, and the etiology and pathology of erythema induratum is not quite settled, the reporting of every case is a duty incumbent on the observer.

In conclusion, I regard it my pleasant duty to express my gratitude to Prof. Harlow Brooks, M.D., of the Department of Pathology, University and Bellevue Medical College, New York City, for his painstaking pathologic and bacteriologic examination of this case, and also to Henry Kreuder, M.D., New York City, for the preparation of the microphotographs.

42 West Ninety-first Street.

DISCUSSION.

DR. A. RAVOGLI, Cincinnati, said that he has always been firmly convinced that erythema induratum is an expression of tuberculosis. In support of this he mentioned the case of a man who accidentally injured his finger, a splinter entering underneath the nail. This splinter carried with it the infection from the saliva of a tuberculous patient, and subsequently an ulcer developed at that point, which proved very persistent. This was followed, in the course of time, by little reddish points in the line of the lymphatics of the arm. These were hard and indicated an erythema induratum. They gradually developed into ulcers and proved to be tuberculous, and doubtless resulted from the original inoculation under the nail. The lesions were thoroughly cauterized, and the patient eventually made a perfect recovery. Another case reported by Dr. Ravogli was that of a young woman who had a number of lesions on the calf of the leg. These persisted for some time without causing any trouble. Some of them disappeared entirely, but one of them ulcerated and had the appearance of a tuberculous lesion. This patient finally died of tuberculosis. He said that since then he has become thoroughly convinced that erythema induratum is a true expression of tuberculosis. Dr. Ravogli said that the cases he has seen of erythema nodosum have led him to believe that it has no connection with tuberculosis. The lesions in erythema nodosum are only of a transient character and without serious consequences.

DR. M. L. HEIDINGSFELD, Cincinnati, said that in spite of the experience of Dr. Ravogli, he still regards tuberculin as a perfectly safe drug to use, and he has never seen any deleterious effects from it. He has found the American products unreliable, he said, and he recalled cases in which their injection had failed to produce any reaction, although tuberculosis was unquestionably present. In using tuberculin, the physician should not only be assured that his preparation is reliable, but that it has not deteriorated. Dr. Heidingsfeld said that the value of tuberculin as a diagnostic factor is demonstrated by the case which Dr. Ravogli cited as an instance of erythema induratum (Bazin). Dr. Heidingsfeld saw that patient at a later stage, and was convinced that the case was one of syphilis; after four weeks of internal treatment with mercury and potassium iodid, and mercurial ointment externally, the lesions cleared up entirely. If tuberculin had been used early in that case the true character of the lesions would doubtless have been recognized. In a case of syphilis which he saw last autumn there was a double infection, with one chancre on the lip and another on the vulva. The case ran a rather severe course in spite of energetic treatment, and large indurated masses developed on the leg and other parts of the lower extremities. These were first regarded as gummatous in character, but mixed treatment had no effect on them, and they subsequently proved to be tuberculous. In that case an injection of tuberculin produced a decided reaction and helped to establish the diagnosis.

DR. JAMES C. WHITE, Boston, said that he believed he was the first to describe this affection as occurring in this country. He observed a type of chronic deep, nodular induration, the lesions being of considerable size. They occurred on the lower extremities and did not run the course of those seen in erythema nodosum. On examining the literature to find a record of such instances elsewhere, he came to Bazin's description of this affection, to which they bore a close resemblance. As time has gone on he has seen cases which were apparently connective links between the typical lesions of erythema induratum, and other conditions of the skin of probably tuberculous nature. At first it was thought that the lesions were confined chiefly to the lateral and posterior surfaces of the lower extremities, but it is now admitted that similar lesions are found more widely distributed over the body; they are sometimes of smaller size and are not confined exclusively to the lateral and posterior surfaces. It is natural, Dr. White said, to associate these conditions with the so-called tuberculides, which have more recently been described.

DR. LUDWIG WEISS, New York City, said that in a recent search of the literature he found a case closely resembling that mentioned by Dr. Ravogli, which Jadassohn has reported under the name of tuberculosis multiplex subcutanea. The lesions in that case developed within a few weeks and then broke down, leaving fistulous openings. The description did not perfectly tally with that of erythema induratum. Dr. Weiss does not believe that in the classical erythema induratum of Bazin the lesions are apt to break down; the same is true of erythema nodosum, and he thinks that the cases recorded as having broken down lesions did not all belong to this type. Dr. Weiss said that it is over 10 years since Dr. White's article first appeared in the *Journal of Cutaneous and Genitourinary Diseases*. In that article Dr. White had a premonition of the discrimination that should be made between different tuberculous lesions of the skin, and warned the dermatologist not to cling too slavishly to any particular detail of the class of lesions now known as tuberculides. In this class of diseases Dr. Weiss regards tuberculin as a valuable diagnostic factor, although he recalled one instance of dormant tuberculosis in which the disease was aroused to activity by an injection of tuberculin, and rapidly caused a fatal tuberculosis of the larynx. With the minute doses used at present such an accident is not likely to occur.

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**Prognosis in Typhoid Fever from Temperature After Cold Baths.**—Marchand gives the details of 7 cases of typhoid fever in which the temperature in the axilla was taken regularly 20 minutes after each bath. The baths were given at 26 C. (78 F.) for 15 minutes, and the number of baths ranged from 16 to 100 in the different cases. In some of the cases the temperature after the bath was found reduced by 1.17 to 1.34 degrees C. (2.4 degrees F.), and the patients in this group all succumbed to the disease. In the patients who recovered the reduction in temperature never surpassed 0.4 degrees Centigrade (0.72 degrees F.), ranging from 0.187 to 0.4. In this latter group were some very severe and protracted cases, but the slight reduction in temperature indicated a favorable prognosis, confirmed by the course of the disease. The article is published in the *Arch. Gén. de Méd.*, lxxxvii, 192, 1907.

# THE PREFERABLE METHOD OF ANTERIOR FIXATION OF THE UTERUS WHEN THE ABDOMEN IS OPEN.*

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ST. LOUIS.

There has been too much laudation of particular operations as such and too little consideration of the various conditions found in the pelvis in operative cases and of how to treat those conditions.

No one operation is applicable to all cases. Even narrowing the subject down to those cases in which the abdomen has necessarily been opened, on account of tubal disease or other abnormal condition, the answer to the question as to which operation is preferable still depends on the associated conditions rather than on the displacement itself. Any one with even a moderate experience knows that intrapelvic conditions differ widely and that an operation which in one case cures retrodisplacement, in another case might prove a complete failure.

My purpose is not to describe a new operation, nor yet to take up an extended or systematic review of established procedures, but simply to mention certain practical points that have come to me in the course of my work. Taking into consideration only those cases of retrodisplacement in which it is necessary to open the abdomen, for some reason, I find, as already stated, that the preferable method of holding the uterus forward depends largely on the particular conditions present. The cases may be divided into four classes:

1. Cases in which the round ligaments and adjacent tissues are freely movable.

Fig. 1.—The puncturing tenaculum forceps. The instrument is strongly made and slender, and is designed to pass easily through the tissues of the abdominal wall, to penetrate the aponeurosis and peritoneum at any desired point, to grasp the round ligament firmly without bruising it, and to return through the wall, bringing the ligament along the new canal. Length, nine inches.

2. Cases in which the round ligaments and adjacent tissues are fixed by inflammatory infiltration or other condition.

3. Cases in which the cervix lies so far forward that the axis of the uterus still lacks the normal anterior direction even when the fundus is brought into the front part of the pelvis.

4. Cases in which there is so much inflammatory infiltration and contraction of the posterior part of the broad ligaments that the uterus can not be brought entirely forward, without danger of serious injury to important structures.

### WHEN THE ROUND LIGAMENTS ARE MOVABLE.

In these cases the broad ligaments, or at least the anterior portions, with the round ligaments, are soft and yielding and can be stretched as desired. The uterus

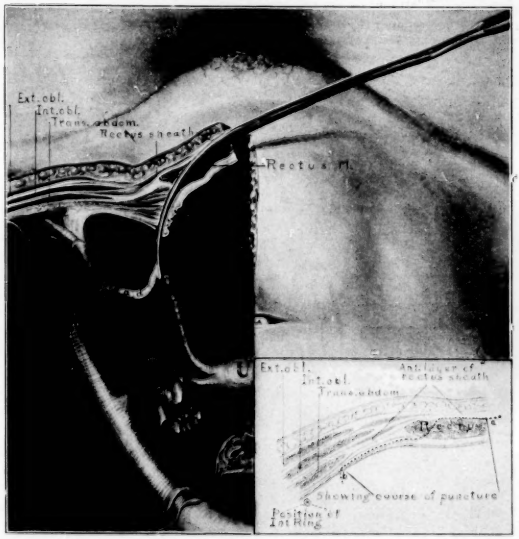


Fig. 2.—The puncturing tenaculum forceps introduced through the wall, as described, and grasping the round ligament. In introducing the forceps through the wall the point is carried along the course indicated by the dotted line *a* to *b* in the small sketch in the corner. Notice that the puncture through the strong aponeurotic wall is made near the outer margin of the rectus muscle, while the puncture through the peritoneum is made at *b*, which is near the internal inguinal ring. The distance from *b* to the internal ring is so short (about one inch) that no puckering suture is necessary. This point is further explained in Figure 3.

is freely movable after the adhesions have been broken up, and if it has been necessary to extirpate a tube the work has been carried out in such a way as not to interfere with the pliability of the tissues in the neighborhood of the round ligaments. In such a case, the uterus may easily be held forward either by drawing the round ligaments into the abdominal wall or by fastening the fundus itself to the abdominal wall. These are both good methods when properly executed. Each of them has given relief, and I see no reason for the bitter condemnatory assertions that are indulged in by writers on each side of the question as to which is preferable. I have used each of the methods with good results, that depended more on the consideration of the conditions present than on the choice of the methods. When the conditions are favorable, as they are in cases of the first class, I prefer to utilize the round ligaments for holding forward and elevating the uterus and adnexa.

*The President's Address, St. Louis Obstetrical and Gynecological Society, Nov. 8, 1906.

There are two disadvantages to the method of fastening the fundus directly to the abdominal wall:

First.—There is a decided uncertainty as to the amount of forward suspension or fixation that will be secured. The object is to form a short band that is strong enough to hold the uterus forward and upward, but that will not interfere with the development of the uterus in pregnancy. From this ideal the uncertainty extends in both directions, i. e., the suspension band may become so slight and attenuated that it fails to keep the uterus forward or, on the other hand, there may result a firm fixation of the fundus to the abdominal wall that causes serious trouble during pregnancy or labor. These undesirable results have occurred often enough to make them valid objections to the operation, but not often enough to warrant us in discarding the operation in conditions in which a better one is not applicable.

Second.—There is danger of the formation of a long slender band with which the intestines may become entangled, producing acute intestinal obstruction. This has happened a few times, but I think the frequency or probability of its occurrence has been greatly exaggerated.

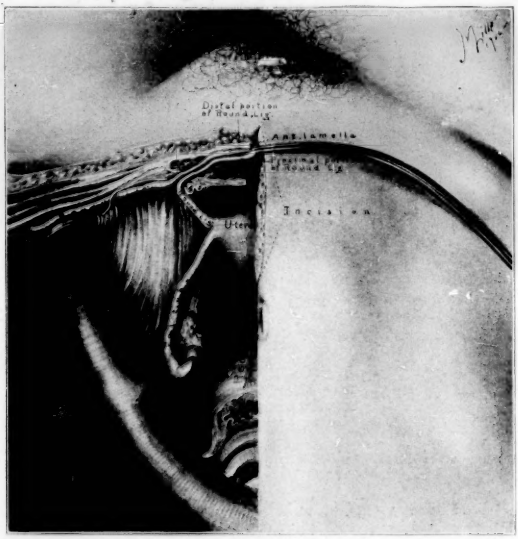


Fig. 3.—The left round ligament drawn into place. Notice that the direction of pull on the uterus is changed from lateral to anterior. At the same time there is no large opening between the distal portion of the round ligament and the anterior abdominal wall requiring a suture as in the regular Gilliam-Ferguson operation. The distance from the peritoneal exit of the new ligament to the lateral edge of the peritoneal cavity at this level is so small (represented in the corner sketch in Figure 2 by the distance from *b* to the internal inguinal ring) that it is closed by moderate traction on the distal portion of the round ligament loop appearing in the wound. If it is desired to bring the uterus farther forward the proximal portion of the ligament is pulled on. If the peritoneum becomes tense before there is sufficient tension on the round ligament to bring the uterus well forward, the peritoneum over the ligament loop may be incised and the ligament itself grasped and drawn out as desired.

Both of these disadvantages may be avoided by using the round ligaments for holding the uterus forward. For their utilization there are several methods applicable after the abdomen is open, but one point should be kept in mind, namely, that the strong part of the round ligament is that portion near the uterus, and the weak part is that portion near the abdominal wall.

Some depend on the weak part of the ligament for holding the uterus forward, while others depend on the strong part. In the former class, folding the ligament is a method which has been modified by many operators. This method with its modifications was used extensively for several years and with excellent results in many cases, but it was found that relapse occurred rather frequently, due to the stretching of the attenuated portion of ligament entering the abdominal wall at the internal ring.

Then came the method of drawing the ligament into the abdominal wall until the uterus was supported by the strong proximal portion. This was accomplished either by grasping the ligament within the inguinal canal and drawing it out through the internal inguinal ring or by drawing it through an artificial opening in the musculo-aponeurotic wall near the median line. In either case, the ligament was drawn out until the uterus was suspended by a short cord consisting of the strong part of the ligament next to the uterus. In the first method, that of drawing the ligament out through the internal inguinal ring, the effect on the uterus was the same as in the Alexander operation.

There are several variations in the method of reaching the inguinal canal. Sandberg reaches the canal from the longitudinal median incision by pulling skin and subcutaneout tissues far to the side, loosening them from the aponeurosis of the external oblique as necessary.

Peterson makes a transverse suprapubic incision and from each end reaches the inguinal canal of that side.

Montgomery puts a ligature about the round ligament some distance from the uterus, threads this ligature into a long curved pedicle needle, and through a window snipped in the anterior peritoneal layer of the broad ligament carries the point of the pedicle needle and the ligature beneath the peritoneum to a point near the inguinal ring. Here the needle is carried through the muscular and aponeurotic structures of the abdominal wall and toward the median line where it emerges in the abdominal incision beneath the skin and subcutaneous fat.

Barrett also fastens a ligature on the round ligament, but instead of carrying it outward in the broad ligament and into the abdominal wall by a pedicle needle he introduces a curved ligature carrier in the shape of a forceps from the abdominal incision, just beneath the upper sheath of the rectus muscle, outward to the internal inguinal ring, through which it enters the abdomen, then follows along the round ligament superitoneally to the ligature. Here it is brought through a small window made in the peritoneum, and the ligature threaded into it; it is then withdrawn, bringing the ligature with it. By means of the ligature the ligament is drawn out as far as it will come.

Dudley, in order to avoid bringing the ends of the ligament into the abdominal incision lest any infection appearing in the wound might extend along the ligament to the peritoneal cavity, brings the end of the ligament

into the peritoneal cavity without touching the incision. This he accomplishes by putting a temporary ligature on the ligament, threading this into a large curved blunt needle, passing the needle into the internal inguinal ring or near it through the aponeurosis, then along for some distance above the aponeurosis and then through the aponeurosis and peritoneum again into the cavity, a short distance from the median line.

In all these operations, the exit of the ligament from the abdominal cavity into the strong musculo-aponeurotic portion of the wall is through the internal inguinal ring or very close to it, i. e., the direction of the pull of the ligaments on the uterus is not changed. Consequently these have the same element of failure that has caused disappointment in certain cases following the Alexander operation and its modifications. The normal exit of the round ligament is placed too far laterally to hold the uterus well forward when there is much tendency to go back after replacement. This has been noted repeatedly by operators, and, in fact, it has long been an established fact that the function of the round ligaments is to exert forward traction on the uterus not in its normal position, but only when it is in marked backward displacement.

I am not condemning the Alexander operation nor its modifications. It is an excellent operation in certain well-selected cases. I have used it with good results and have watched it through pregnancy and labor and afterward with the utmost satisfaction. But I have found that it is not applicable in certain cases of apparently freely movable retrodisplacement, namely, in those cases in which there is a persistent backward pull, as evidenced by the tendency of the uterus to go backward as soon as the replacing fingers were removed. In such cases it is likely to result in partial failure, the uterus being found in moderate backward displacement after a time. Likewise, a shortening of the ligaments after abdominal section by drawing them through the internal inguinal rings may result in the same partial failure if there is much tendency of the uterus to go backward.

In the second general method above mentioned, that of drawing the ligament through an opening in the musculo-aponeurotic wall nearer the median line, the pull of the supporting portion of the ligament is changed from a transverse toward an anteroposterior direction, with a consequent marked increase in its ability to hold the uterus and adnexa well forward.

There are several variations in the method of changing the course of the ligaments. It will not be necessary to mention all of them. The Gilliam-Ferguson operation stands as the type of this class. Gilliam passed a temporary ligature around the ligament from 1 to 1½ inches from the uterus. The skin and subcutaneous tissues on that side of the abdominal incision were then pulled aside and a sharp-pointed artery forceps was introduced through the fascia, muscle and peritoneum into the cavity, where it grasped the ligature and brought it out. With the ligature the round ligament was then drawn out as desired and the ligament of the other side was treated in the same manner. Ferguson added a puckering suture to bring together the parietal peritoneum and the distal portion of the round ligament, thus doing away with any opening through which a knuckle of intestine might slip and be caught.

G. H. Noble succeeds in satisfactorily changing the direction of the ligament and shortening it by the following method: He enters the abdominal cavity through a transverse suprapubic incision made in the usual way and completes the intra-abdominal work. Then at one end of the transverse incision, just beyond the margin of the rectus muscle, an artery forceps is thrust through the posterior sheath of the muscle, but not through the peritoneum. The forceps is opened and withdrawn so as to make an aperture in the aponeurosis large enough to admit the finger. The finger is then introduced and carried along the peritoneum and the aponeurosis to the internal inguinal ring where the round ligament, made tense by being caught within the abdomen and pulled on, is felt. The finger is hooked about the ligament which is drawn into the wound. The ligament is then drawn out to the desired extent, its peritoneal sheath being stripped back toward the uterus. The other side is treated in the same way and the two ligaments fastened together over the rectus muscle.

Fig. 4.—The use of the puncturing tenaculum forceps in the regular Gilliam-Ferguson operation. The puncture is made directly through the upper sheath, the rectus muscle, the lower sheath and the peritoneum, and the ligament grasped and brought out—the puckering suture having been previously passed. After the ligament is brought out as desired, the puckering suture is tied, thus closing the opening at the side between the distal portion of the round ligament and the anterior abdominal wall.

It will be noticed that in this operation the new point of entrance of the ligament into the strong aponeurotic wall is at the outer margin of the rectus muscle. The peritoneum is sufficiently movable on its underlying structures to permit this shortened ligament to extend almost directly from the angle of the uterus to the point of exit at the outer margin of the rectus muscle, thus

(*Concluded on page 1497.*)

# A SERIES OF INTERESTING GYNECOLOGIC AND OBSTETRIC CASES.

I.—AN EIGHTY-NINE POUND CYSTIC MYOMA. II.—A LARGE PARASITIC MYOMA. III.—MULTIPLE PERFORATION OF THE UTERUS DUE TO A MACERATED FETUS. IV.—ABDOMINAL PREGNANCY OF FOUR YEARS' DURATION. V.—CHORIOEPITHELIOMA.

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## SUCCESSFUL REMOVAL OF AN EIGHTY-NINE-POUND CYSTIC MYOMA INTACT.

As will be noted from the following history, this patient was cognizant of the fact that the tumor had existed for over 20 years. At that time she was under the care of Dr. James Bosley, the present health officer of Baltimore. Further, it will be seen that this large growth did not prevent her from looking after her household duties until recently, and less than three months before the operation she took a 180-mile trip with no ill effects. This, so far as we can learn, is the largest myoma of the uterus that has been successfully removed. The patient is now, eight months after the operation, in perfect health and is gaining rapidly in weight.

CASE I.—Mrs. McA., aged 58, was seen in consultation with Dr. Marshall Smith, June 25, 1906.

*History.*—Twenty years ago she noticed a tumor in the lower abdomen and later was seen in consultation with Dr. W. T. Howard, emeritus professor of gynecology in the University of Maryland, who at that time advised an operation. Some time after this she was delivered of a healthy child, now 18 years of age. This patient, although suffering from a large abdominal tumor, was able to go around and to do her work until three weeks before I saw her. He chief inconvenience had been her inability to lie on her back in bed. And sometimes when she would get "stalled," it was necessary for her husband to turn her over quickly, otherwise she would have suffocated. For two weeks before admission she had a temperature sometimes reaching as high as 103 F. She was admitted to the Church Home and Infirmary July 27, 1906. There was considerable edema of the lower part of the abdomen and some edema of the legs. On admission to the hospital her temperature was 100 F., pulse 105. On the morning of operation the temperature was 100 F., pulse 100, respiration normal.

Fig. 3.—A large parasitic myoma, which weighed 18 pounds and was attached to the uterus by a pedicle 3x.5 cm. At the top is a broad omental adhesion carrying vessels to the tumor. At *b'* is a cross-section of a portion of the "rope of omental vessels," which pass down beneath the tumor to *b* and then turn upward again, plunging into the tumor. *a* represents one of the largest vessels, which stand out prominently. Crossing these large vessels are numerous adhesions. *c* is a portion of the large vessel which passed down perfectly free from the omentum to the under surface of the tumor.

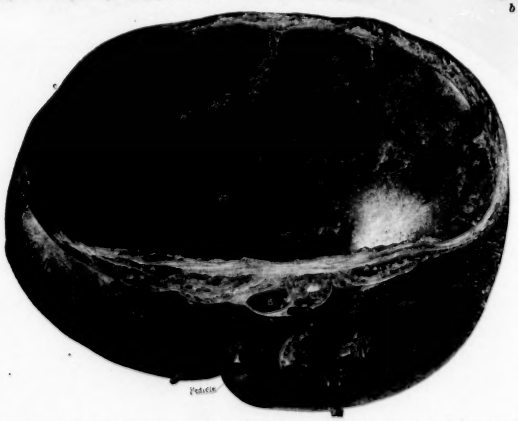


Fig. 2.—Cross-section of a cystic myoma weighing 89 pounds. The pedicle is clearly seen and in the fresh specimen is not over 1.5 cm. in diameter. Attached to the top over the pedicle are the tube and ovary and near the tube is a piece of liver substance. The tumor has been converted into one large cavity the walls of which consist of muscle. In the walls are numerous cystic spaces particularly well shown at the points indicated by *a*. There are several large cystic dilatations in the wall. The largest is indicated by *b*. The myomatous walls vary from 5 cm. to 1 or 2 mm. in thickness. At the point *c*, where the tumor lay over the vertebral column, the wall is exceedingly thin. The entire inner surface is lined by partly organized blood clots, which give the growth a very shaggy appearance. The entire tumor was filled with blood. The outer surface of the tumor is in many places covered by adhesions containing large vessels.

*Operation.*—July 30, 1906. Prior to receiving the anesthetic the patient was thoroughly washed and all preparations for operation were made, so that she might remain as short a time as possible under ether. It was impossible for her to lie down, consequently she was operated on in the sitting posture. An incision was made over the most prominent part of the tumor and I attempted to puncture it; the growth, however, started to bleed and no cystic fluid escaped. I continued the incision upward, for the reason that many large veins projected into the tumor from some structure above. The incision was gradually continued upward until the xiphoid was reached (Fig. 1). We found that the large vessels going to the tumor were omental in origin and that they were spread out over the entire upper surface. Some of them were fully 7 or 8 mm. in diameter. The tumor was densely adherent to the anterior and to the lateral abdominal walls. These adhesions were gradually shelled off with the hand, but I had to use the utmost care and do all liberating under sight, as the rupture of one large vein might have caused the loss of the patient's life before the hemorrhage could have been checked. Accessory vessels also passed from the stomach and the liver to the tumor. The

pedicle of the tumor was not more than 1.5 cm, in diameter and was situated directly beneath the ribs. On removal of the tumor I found that I had brought away a piece of liver tissue 3 cm. in diameter. We had no liver needles handy, so I used sharp Hagedorn needles, running the eye through instead of the sharp end. This device answered admirably and the liver bleeding was easily checked by four catgut sutures. The uterus and the right tube and ovary lay under the surface of the liver. Anticipating the possibility of great difficulty in controlling the tumor, we had prior to operation sterilized a large foot-bath and covered it over with a sterile sheet. The foot-bath held about one-third of the tumor and the person who took charge

Fig. 5.—Pregnant uterus, the fetus and placenta intact. After the uterus had been well hardened the anterior surface was removed. The cervix presents the usual appearance and the uterus is firmly contracted around the fetus. The head lies in the upper portion. The left arm is firmly adherent to the left side of the chest and the skin is macerated to some extent. Situated in the lower part is the placenta which extends slightly over the internal os.

of it was able to guide the tumor in the desired direction without allowing it to slip from his grasp. The tumor was drawn downward and outward and finally delivered from the abdomen. In the lower part it was extraperitoneal. I closed the abdomen, but left a small cigarette drain in the extraperitoneal pouch just over the symphysis.

*Postoperative History.*—The patient stood the operation well, but was commencing to collapse by the time we finished. She was under ether for one hour and twenty minutes; 200 grams of ether were used. The operation, from the incision to complete closure, took fifty-five minutes; a much longer time would have been consumed had it not been for the combined assistance of both the Johns Hopkins and Church Home staffs. The patient's temperature rose to 102.2 F. within eight hours after operation, but dropped to 100 F. by evening. The highest pulse rate was 130. There was no postoperative vomiting. The legs were bandaged on account of the edema. The patient voided urine on the evening of the day of operation. She was catheterized only once. The usual after-treatment was employed. On the fourteenth day she had considerable discomfort from frequent stools. The diarrhea persisted off and on for a couple of weeks. At this time, however, the weather was excessively hot and diarrhea was general throughout the hospital. It affected chiefly those patients who were somewhat weak. The patient on admission to the hospital weighed 174 pounds. Twenty-three days after operation she weighed 80½ pounds. The condition of the abdomen in this case was particularly interesting. I did not even resect a portion of the abdominal wall, because we had to save as much time as possible during operation. At the first dressing it was noted that the ribs extended out fully 6 inches from the abdomen and that the recti muscles lay on the bed on either side, while there was a good deal of loose and wrinkled skin covering the abdomen. Another interesting point was that the gauze, which drained the extraperitoneal pocket just at the symphysis, now lay in the middle of the abdomen as the tissues were gradually contracting. After the lapse of two weeks the recti muscles could be felt gradually contracting and coming in and the costal arch was flattened down to some extent. When I examined her six weeks after operation the recti muscles were well up in the abdomen, being not over 10 cm. apart. The skin had contracted down wonderfully. The pendulous skin over the symphysis had retracted to a marked extent and the ribs were almost in their normal position. At the time of operation there was a good deal of edema of the abdominal walls. There was also edema of the legs and of the buttocks. Although the utmost care was used, a bedsore developed several days after the operation, there being a black slough over the sacrum 6 cm. in diameter and surrounded by a faint red halo. It had resulted from pressure on the table. The patient had marked edema of the back, but was forced to sit up during almost the entire operation. After she went home she rapidly regained her strength. The bedsore gradually diminished and in time entirely healed. It is astonishing that she had so little inconvenience after the operation.

*Description of Tumor.*—Miss N. Ellicott, superintendent of nurses, weighed the tumor immediately after its removal; the net weight, after deducting that of the vessel in which it lay, was exactly 89 pounds. The thin part of the tumor lay posteriorly, otherwise we might have evacuated the tumor. Had we done so, however, it would have been much more difficult to have gotten at the large vessels, which we encountered at

Fig. 7.—Chorioepithelioma. The specimen consists of a uniformly enlarged uterus. The cervix is perfectly normal, the body was as large as that of a five months' pregnancy. Occupying the entire body of the uterus is a new growth with many depressions and cystic spaces extending into the wall. The growth itself presents a peculiar porous appearance (*b*), and the finger-like process so characteristic of carcinoma is absent. In the lower part of the uterus the outer muscular walls are still clearly seen, but in the upper part of the cavity the growth has extended almost to the peritoneal surface. The growth could hardly be mistaken for anything else. It is remarkable to see such a uniform involvement of the entire uterine wall. *a* Indicates clearly the sharp line of demarcation between the malignant growth and the outer muscular covering.

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almost every point. Had this condition persisted much longer the posterior wall of the tumor would certainly have given way and then operation would have been almost out of the question. As it was, the hardened specimen collapsed of itself when placed on the table.

*Macroscopic Examination* (Gyn. and Path. No. 10382).—The hardened specimen is about 50 cm. in length, 45 cm. in breadth and approximately 25 cm. in thickness. Over the entire anterior surface and laterally are numerous adhesions. Attached to the upper border is an area of omentum 20 cm. in breadth and the hardened vessels range from 5 to 6 mm. in diameter. The pedicle of the tumor is 1.5 cm. in breadth, 1 cm. in thickness and the portion removed is 1.5 cm. in length. Situated just beneath the pedicle and attached to the surface of the ovary is a piece of liver substance 3 by 2 cm. (Fig. 2). On pressure the tumor in part seems to be solid, in part cystic. At operation when I attempted to puncture the tumor, nothing but blood was encountered. The growth is, however, evidently made up of one large cystic space and numerous smaller ones, together with the semi-solid area. Over the part that is cystic the muscle fibers have been greatly stretched and thinned out and there are little hernial projections, the picture being analogous to that found in a slightly sacculated urinary bladder. On section the greater part of the tumor is found to consist of one cavity, which is approximately 42 by 35 cm. The walls vary from 2 mm. to 5 cm. in thickness. Only at one point is the wall very thin, namely, on the under surface where it lay over the vertebral column. The greater part of the wall consists of simple myomatous tissue, but at numerous points small cystic areas are visible and the tissue has undergone the characteristic hyaline transformation. One of the cysts measures 2 by 3 cm. The inner surface is covered with blood and the greater part of the tumor is filled with blood, which has undergone coagulation during the hardening.

*Microscopic Examination.*—On histologic examination the growth is seen to be made up of typical myomatous tissue. In many areas hyaline transformation has taken place and at some points there is typical liquefaction. The inner surface of the cyst has no epithelial lining; it is covered with blood which is faintly organized.

Dr. Herbert P. Cole, in looking over the literature for me, has found in all about 240 cases of large tumors of the uterus.

The largest authentic successful case found was that of Clarence Webster. The tumor weighed 87 pounds. This was also a cystic myoma and much of the fluid was removed before the tumor was extirpated. Among other successful cases is that of Eastman, in which the tumor weighed 60 pounds.

There are numerous instances of tumors weighing from 40 to 60 pounds. Keith, for example, reported one of 52 pounds, and in Dr. Kelly's service at Johns Hopkins we have had very large ones. Knowsley Thornton reported an instance of a fibrocystic tumor weighing 91 pounds; Tait reported one of 68 pounds, and Stockard one of 135 pounds. Stockard's patient died after tapping. McIntyre of St. Louis operated on a patient with a tumor weighing 93½ pounds. The woman died of peritonitis.

Platonoff saw a patient with a tumor weighing 90 pounds. Two unsuccessful operations were performed and the woman died of gangrene without removal of the tumor.

Hunter speaks of a 140-pound tumor seen at autopsy. Gilliam says that 200-pound tumors have been seen. Such data, however, are hardly reliable unless careful histologic examinations have been made. The tumor in Webster's case weighed just two pounds less than ours. The operation was performed Dec. 16, 1902. There were numerous adhesions, and the entire growth was removed under Schleich's solution and a few drops of chloroform.

Those wishing to get full data on this subject should read the articles by George W. Johnson,[1] G. Piquand,[2] Joseph T. Johnson,[3] McIntyre[4] and Clarence Webster.[5]

### A LARGE PARASITIC MYOMA WITH MARKED DEVELOPMENT OF THE OMENTAL VESSELS, SOME REACHING 1 CM. IN DIAMETER.

At Johns Hopkins Hospital we have been studying with a great deal of interest the gradual weaning away, as it were, of pedunculated myomata from their parent blood supply in the uterus. As the pedicle becomes smaller the blood supply from the omentum becomes more vigorous until eventually the uterus forms an insignificant source of nourishment and the omentum, as in this case, sends in very large vessels. I have studied a large series of such cases, which will be published by Dr. Kelly and myself at a later date. In the more advanced cases the omental fat disappears completely and the vessels lie just between two peritoneal folds. In this case the cord of omental vessels forming a rope 6 cm. in diameter seems almost unique.

CASE 2.—C., a colored patient of Dr. Scheller, of Hagerstown, was admitted to the Hagerstown Hospital, Aug. 4, 1906. She had had an abdominal tumor for five years. The tumor rose abruptly and projected fully 18 inches from the general abdominal contour. The vagina posteriorly was greatly encroached on.

*Operation.*—On opening the abdomen a tumor was encountered which was adherent everywhere to the anterior abdominal wall and also laterally. Running into the anterior surface of the tumor from its upper end were blood vessels, some of them nearly 1 cm. in diameter. They were spread out over an area 16 cm. in breadth. Passing down the right side of the tumor and lying beneath it was a regular rope of blood vessels (Fig. 3). These lay perfectly free from the surrounding structures, could be lifted up, were covered with peritoneum and were evidently omental; but no fat was present. These vessels formed a mass 6 cm. in diameter and looked and felt like small masses of snakes. They could be traced down to the lower end of the tumor, where they spread out over its surface and plunged into its substance. One of the vessels, 5 mm. in diameter, passed down by itself and lay absolutely free. It was isolated for a distance of 18 cm., being devoid of any attachment whatever. It originated in the omentum and extended downward and plunged into the tumor. After liberating the vascular supply we found that the tumor was attached to a small myomatous uterus. The pedicle was 3 cm. in breadth, 5 mm. in thickness and contained but one blood vessel of any size. The pedicle was cut and the tumor delivered. In the vessels passing from the omentum we encountered, as a rule, one artery and two veins. The artery was about one-third the size of a vein. As the patient's condition became rather serious, although she had not lost more than two ounces of blood, we ceased the operation, the patient still retaining her myomatous uterus and a second myoma fully 25 cm. across. This also had vessels from the omentum plunging into its upper part and was attached to the uterus by a pedicle 2 cm. in diameter. As soon as the patient regains her strength thoroughly I hope to remove the uterus and the large parasitic myoma.

*Result.*—The patient made a satisfactory recovery and left the hospital about six weeks after her admission.

*Description of Specimen.*—On examination of the hardened specimen, it is found to be 23 cm. in length, 25 cm. in breadth and 20 cm. in its anteroposterior diameter. It is markedly nodular, exceedingly hard and weighs 18 pounds. The upper omental attachment still clinging to the tumor is 15 cm. in width and 8 cm. in length. The omental attachment that ran down

1. Johnson (G. W.): Collected Cases of Fibromata of the Uterus with Tables. Amer. Jour. Obst., 1885, 1272
2. Piquand (G.): Les Tumeurs Fibro-Kystiques de L'Uterus. Rev. de Chir., 1906, xxxiii, 462.
3. Johnson (Joseph T.): Amer. Jour. Obst., December, 1891, 1420.
4. McIntyre: THE JOURNAL A. M. A., 1891, xvii, 13.
5. Webster (Clarence): Jour. Obst. and Gyn., Brit. Empire, August, 1903, 135.

the side of the tumor consists almost entirely of blood vessels. Its attachment at the lower border is 20 cm. broad. Even in the hardened state some of the blood vessels are nearly 1 cm. in diameter.

### DEATH OF FETUS WITH SUPPURATION; PERFORATION OF UTERINE WALLS; SUPRAVAGINAL HYSTERECTOMY; RECOVERY.

This case demonstrates how Nature, if left alone, may successfully ward off an attack of general peritonitis. Here there was suppuration in the uterine cavity, numerous perforations of the uterus—fortunately situated entirely in the anterior wall—and then successful walling off by the abdominal wall becoming adherent to the uterus.

CASE 3.—A. P., colored, aged 21, was admitted to the Cambridge Hospital, March 4, 1906. The patient had been thought to be pregnant one year before. She had been carefully watched for some time, but no further developments had taken place. She had had some slight fever. Nothing more definite could be learned, however. When I examined her the cervix was soft; the uterus was globular and lay half way between the umbilicus and the xiphoid. The growth was apparently somewhat movable.

*Operation.*—I made an incision over the growth and immediately came in contact with what looked like grumous material, which suggested a suppurating ovarian cyst. As the tissues were densely adherent, I continued the incision upward

Fig. 1.—Tremendous abdominal enlargement due to a cystic myoma. The abdomen is markedly and uniformly distended and the growth extends down almost to the knees. It will be noted that there is no sagging in the flanks. Coursing over the surface were very large vessels. When it is realized that the abdominal incision extended from the xiphoid cartilage down over the entire length of the tumor and then back to the symphysis it is readily seen that the incision was nearly 4 feet in length.

and opened up the general peritoneal cavity. On loosening the other adhesions I found the omentum adherent. This was clamped and cut. The tumor was intimately blended with the thickened abdominal peritoneum. It was shelled out as rapidly as possible, but pus oozed from the surface in various directions (Fig. 4). I thought that I was dealing with an ovarian cyst, but was surprised to find on releasing it from the adhesions that it was the enlarged and globular uterus. I amputated through the cervix. The tubes and ovaries were covered by a few slight adhesions, but were otherwise normal and were left behind. It was with the greatest difficulty that enough peritoneum was obtained to close the abdomen, as so many raw areas had been left where the uterus had been adherent to the abdominal wall. A gauze drain was introduced into the lower part of the incision. The patient improved rapidly and left the hospital feeling perfectly well.

*Description of the Uterus* (Gyn. and Path. No. 9810).—The specimen consisted of an irregular and globular mass approximately 18x17x15 cm. in diameter. Its surface was everywhere covered by adhesions, and at numerous points were openings irregular in shape and varying from 3 mm. to 5 mm. or more in diameter. Through these openings quantities of pus welled out during the operation. The pedicle or cut surface was 4 cm. in breadth, 3 cm. across and in the central portion of this was what looked like the cervical canal. On opening the specimen after it had been hardened we found that this tumor was the uterus (Fig. 5). The walls varied from 1.5 mm. to 4 mm. in thickness.

Fetus: Snugly filling the entire cavity was a fetus (Fig 5). The length of this fetus from elbow to axilla was 7 cm., from elbow to shoulder 8 cm. The breadth of the fetus in the axillary line was 13 cm. Other measurements could not be made on account of the distortion of the child, but it appeared to be an eight-month fetus. The skin was somewhat macerated. The child had evidently been a mulatto, as in many places the mottled appearance was still present. At other points, however, the outer skin had been rubbed off and the surface had the pale appearance of a white child. The hair which was matted up against the uterine wall was curly and black and several centimeters in length.

Placenta: The placenta occupied the lower quadrant of the uterus and projected over the cervix; there had been a partial

Fig. 4.—The perforated pregnant uterus as seen on removal. It is everywhere rough and covered by adhesions. In the lower part of the field is seen the stump of one tube. At points *a*, *a* are perforations of the uterus, whence pus was seen oozing out; at *b*, *b* the walls are exceedingly thin, there have been many adhesions and pus is lying on the surface. One would not for a moment take this to be the uterus except for the presence of the tube.

placenta prævia. The placenta at the thickest portion was 2 cm in thickness. Attached to the surface of the child, especially in the vicinity of the hair, was much friable, yellowish material. This looked very much like inspissated pus. It was from the surface of the uterus at points of perforation that the purulent discharge came during the operation.

Sections of Uterine Wall: Sections from the uterine wall showed that the outer surface, at certain points, particularly where it was adherent to the abdominal wall, was covered by numerous adhesions. On the protected side cuboidal cells were visible. The muscle at such areas showed a great deal of small round celled infiltration. The inner lining of the uterus was much altered. There was a good deal of canalized fibrin and also regular ribbons of hyaline and canalized fibrin. Just beneath the surface and on both sides of this were numerous small round cells and polymorphonuclear leucocytes. At a few points calcified villi could be made out. Decidual cells were still in evidence, but they had become smaller.

*Remarks.*—There had evidently been a chronic inflammation of the inner surface of the uterus coupled with an inflammatory process on the outer surface at the points where the uterus was

adherent to the abdominal wall. In this case there had been death of the fetus for some cause or other and discharge or absorption of the liquor amnii. Suppuration had taken place in the uterine cavity. At some points the uterine walls had become perforated and the pus had trickled out over the surface. Fortunately, no intestines lay in the way and the pus had glued the uterus to the anterior abdominal wall. This is certainly one of the rarest conditions to be met in the literature.

### ABDOMINAL PREGNANCY OF FOUR YEARS' DURATION; OPERATION; RECOVERY.

In this case there was a typical history of a pregnancy going on apparently to term. Labor pains developed and soon ceased and the patient retained a tumor for between three and four years without any marked discomfort. It is certainly remarkable that this abdominal tumor persisted so long without giving rise to any alarming symptoms. The nourishment of the abdominal pregnancy was, of course to a great extent furnished by the omentum.

Fig. 6.—Abdominal pregnancy of four years' duration.—The illustration is an exact reproduction of the abdominal contents and has been drawn from the specimen. The uterus is normal in size, normal in position. Attached to its right side is a large pus tube which is densely adherent to the sac. On the left side the structures are not clearly outlined, as the broad ligament was intimately attached to the pregnant sac. Passing over the anterior surface of the sac in its upper portion, and considerably flattened, is the transverse colon. Densely matted to the surface of the sac is the omentum. In the upper part of the sac a window has been cut out and to the left a hand, at the top a foot, and between these two and lying in the vicinity numerous tufts of hair represented in black may be seen. The sac passes down and almost completely fills Douglas' pouch. This tumor had lain in the abdomen nearly four years. Apart from the adhesions to the transverse colon the intestines were perfectly free.

CASE 4, Gyn. No. 13272.—J. A., colored, married, aged 28, was admitted to the Johns Hopkins Hospital from the dispensary, Sept. 27, 1906.

*History.*—She complained of pain and swelling in the abdomen. Her general health had always been good and she had never consulted a physician before. Her menstrual history was unimportant. She had been married fifteen years and had had four children, the eldest nearly 15 years old. The second child was deficient mentally but lived five years. The third was 10 years and the youngest 8 years of age. Her labors had all been normal; there had never been any miscarriages. For some years she had had a slight amount of thick, white, foul-smelling discharge, more marked before and after her menstrual periods than at any other time. For several years she had been constipated, the bowels not moving for two or three days at a time. She had passed no blood nor mucus.

*Present Illness.*—About four years ago she noticed a small lump in the lower part of the abdomen. This was the size of a baseball situated below and to the left of the umbilicus. The tumor increased in size at a uniform rate and the patient thought she was pregnant. At the end of nine months the tumor reached above the umbilicus. The breasts were enlarged and contained colostrum. The patient had had no nausea or vomiting. Her menstrual periods had been regular, although she had had a very scanty flow. She was certain that she had felt movements of the child. About the time that labor should have come on she had bearing-down pains beginning in the evening and lasting until early morning. The pains ceased then and never returned. The patient thinks that she has never had any other signs or symptoms since that night. The breasts gradually became soft and dried up. The tumor seemed to decrease slightly in size. No movements were felt and the patient suffered no discomfort. She became convinced that she had a tumor.

Symptoms: Until about a year ago she could go about her work without difficulty, but then she began to notice a little soreness and the "tumor began bothering her."

Within the few months previous to admission she had felt an increase in the amount of soreness. She had had headaches at times, her tongue had been coated, she had frequently felt nauseated but had not vomited. After walking a good deal there was a burning sensation in the lower part of the abdomen, and during the last two months the headaches had been quite severe. The patient had to stop work on account of the burning pain that would come and go. This pain was eased by lying down. She slept well, but her appetite was poor and she said she did not gain in weight. There was no pain nor burning on defecation or urination.

*Examination.*—Dr. Hutchins, the resident gynecologist, found the patient rather emaciated. The abdomen was distended rather more on the left than the right side by a tumor which rose from the pelvis and reached 4 cm. above the umbilicus in the median line. The tumor felt cystic; it was movable, dull everywhere on percussion and no fluid wave was noted. On vaginal examination no evidence of infection could be found. The cervix was firm. There was slight bilateral laceration. The uterus was in anteposition, normal in size and apparently in no way connected with the abdominal tumor. Movement of the tumor did not draw the cervix upward. Clinically, the tumor was thought to be an ovarian cyst or a myoma, but no definite diagnosis could be made.

*Operation.*—Sept. 28, 1906. After making a long abdominal incision it was found that the abdominal cavity was occupied by a large "tumor of the left ovary," to which were adherent the omentum, the entire transverse colon, a portion of the sigmoid, and the ascending colon. The uterus was densely adherent to the right side. The omentum was tied and cut, a portion being left attached to the tumor, the proximal portion being reflected backward with the transverse colon. In doing this the thin wall of the tumor was ruptured and an ounce or two of thick creamy, yellowish material escaped. This was rapidly sponged up, and further escape controlled by pressure with gauze. In order to avoid infection, so far as possible, the right tube which had been converted into a pus sac and was adherent to the cystic tumor was liberated. The broad ligament on the left side was clamped and cut so that the tumor could be shelled out of the pelvis and tipped over to the left side. In this way the grumous contents of the cyst were prevented to a great extent from escaping into the abdominal cavity. After the tumor was shelled out there was a great deal of bleeding from the mesocolon. This bleeding was checked as far as possible by sutures and the transverse colon was then curved in on itself, so that the mesocolon formed a funnel. A gauze drain

was introduced into this as it dropped down on the pelvic brim and was brought through the vagina. In this way we were able to check the bleeding almost completely. The abdomen was closed without drainage from above.

*Result.*—The patient made a very satisfactory recovery and was discharged Oct. 21, 1906.

*Description of Tumor* (Gyn. and Path. No. 10417).—The specimen consists of an abdominal tumor which was connected with the left broad ligament and the left tube and ovary. It was absolutely free from the uterus, which was not removed. The specimen in the hardened state measures 24 cm. in length, 18 cm. in breadth and 16 cm. in its anteroposterior diameters (Fig. 6). Attached to its right side are the right pus tube and the right ovary. To its left are the tube and ovary, which are plastered down on it. Covering almost the entire upper surface of the tumor is omentum, which is densely adherent to the mass and furnishes a large part of its blood supply. The walls of this tumor vary from the thickness of paper to two or three millimeters. From this tumor grumous material, like fat mixed with pus, escapes and at several points hair can be seen. On cutting a window out (Fig. 6) the interior is found to be filled with a fetus, which is of at least seven or eight months' growth. On account of the distorted condition it is difficult to get the exact age, but the sole of the foot measures 6.5 cm. in length and looks mature. The other parts are correspondingly large. The hair of the child is black and curly. There are several points where slight ulceration of the surface has taken place. These points correspond to the very thin areas noted in the outer covering. The right tube, which was so firmly glued down that it was thought necessary to remove it, in the hardened state, measures 10 cm. in length. It is entirely covered by adhesions, and at its fimbriated end reaches 2.5 cm. in diameter. The ovary is also covered by adhesions, but is not enlarged.

The left ovary is very much flattened and covered by adhesions. The tube runs over into the tumor mass and is lost. It is flattened out and at one point measures .8 cm. in diameter. The placenta is attached to the left side of the mass.

*Histologic Examination.*—The sac enclosing the fetus shows that where the omentum has been adherent it has been transformed almost entirely into new and old connective tissue; even the outer adhesions which contain islands of adipose tissue are for the most part made up of dense fibrous tissue. Passing inward the fibrous tissue looks older and then hyaline areas are seen which in size and form closely resemble placental villi. Between these are many small round cells and spindle cells. The inner portion is composed of similar hyaline areas surrounded by a zone of brown pigment that has evidently resulted from an old hemorrhage. The inner surface is lined by necrotic tissue which is especially rich in canalized fibrin, containing chiefly polymorphonuclear leucocytes. In no place is there evidence of muscle fibers and it looks as if the case was one of an abdominal pregnancy in which the sac, which was partly supported by the omentum, had gone on to new connective tissue formation.

*Remarks.*—As noted in the description of the operation the uterus was in no way implicated in this growth. It was situated in the center of the abdomen and gave no signs of being half of a bicornuate uterus.

*Diagnosis.*—Abdominal pregnancy of 4 years' standing, suppuration of the sac, dense omental adhesions.

## CHORIOEPITHELIOMA WITH THE UTERUS THE SIZE OF THAT OF A FIVE MONTHS' PREGNANCY; HYSTERECTOMY; APPARENT RECOVERY.

This disease, although by no means rare, is not very common. From Baltimore only two cases have been reported. In 1895 J. Whitridge Williams,[6] under the title "Deciduoma Malignum" reported a case occurring in the University of Maryland Hospital; and in the last edition of Kelly's "Operative Gynecology" a case is cited from the Gynecological Department of the Johns Hopkins Hospital. Thus at the Johns Hopkins Hospital only two cases have been encountered in 17 years.

6. Johns Hopkins Hosp. Rep., vol. iv, 1895.

By a fortunate coincidence on the morning on which I operated on the patient whose history is here given, Dr. Cuthbert Lockyer of London, England—the man who has worked so much on this subject in Great Britain—was present. Even from the macroscopic examination the gross appearance was so characteristic of the placental growth that both of us at once said "chorioepithelioma." In this case the decidual-like cells, those supposed to originate from Langhan's layer, predominated, but in some places the large sinuses, the brown-staining protoplasm and the characteristic vacuoles were in evidence. The specimen is particularly interesting on account of the uniformity of the distribution of the growth throughout the entire uterine body.

CASE 5, Gyn. No. 13204.—The patient was admitted to the Johns Hopkins Hospital on Aug. 31, 1906, and was discharged on Sept. 25, 1906.

*Examination.*—She was not very well nourished. The mucous membranes were of a fairly good color. There was no glandular enlargement. The heart and lungs were normal. On examination Dr. Rushmore found the abdomen somewhat distended by a firm mass which rose out of the pelvis and extended as high as the umbilicus, rather more prominently on the left than on the right side. The mass was slightly movable and not tender except just above Poupart's ligament on the left side. It was regular in outline and on deep inspiration its upper border was obliterated by the surrounding intestines. The vaginal outlet was moderately relaxed, the cervix was high in the vaginal vault, lying far back and pointing downward. The cervical lips were not hypertrophied; the os was slightly patulous. There was no induration suggestive of new growth. The mass in the pelvis was uniformly fixed. On examination, under ether, the tumor seemed to be freely movable, but resembled a fibroid about 6 inches in diameter with a cystic mass on the left. The breasts contained colostrum.

*Operation.*—September 3: On exposure of the enlarged uterus the appearance suggested pregnancy very strongly. The vessels were much dilated. No definite nodules could be made out in the fundus, but on the posterior surface was a slight prominence, with a curious yellowish discoloration of the tissue beneath, and there were numerous dilated blood vessels suggestive of a malignant new growth. As a definite diagnosis could not be made from palpation we decided to incise the uterus over the prominence, at the same time carefully walling it off, so that there would be no danger of infection and the general cavity would be protected. On incision a vascular new growth was immediately seen. This had a spongy appearance and immediately suggested a malignant growth differing entirely from carcinoma and in no way resembling sarcoma. The incision was immediately closed with silk and the uterus removed. A vaginal drain was inserted in the lower angle of the abdominal wound in order to drain down to the peritoneum. The liver was carefully examined for metastases, but none could be detected.

*Result.*—The patient was examined on September 24, prior to her discharge. The abdominal incision was well healed; neither induration nor tenderness could be made out in the vaginal vault. Dr. Holland, writing me on Oct. 29, 1906, says: "I received a letter from her two days ago. She was able to be about the house, is cheerful, and is gaining in strength. She still complains of pain in the right arm which developed when she was in the hospital."

*Remarks.*—In this case there was no positive history of a recent miscarriage, although the possibility can not be excluded. The contour of the uterus on pelvic examination strongly suggested a myomatous uterus and with the abdomen opened it was impossible for one to exclude the possibility of pregnancy.

*Description of the Tumor* (Gyn. and Path. No. 10278).—The specimen consists of a greatly and uniformly enlarged uterus measuring 20 cm. in length, 13 cm. in breadth and 12 cm. in thickness. The anterior surface is smooth and glistening; the posterior is covered by many adhesions, thin and fanlike. Attached near the left cornu is a tag of omentum. On section the uterine cavity is found to be 15.5 cm. in length.

The uterine walls vary from 3 to 6 cm. in thickness. The outer portion of the wall consists of muscle varying from 1 to 1.5 cm. in thickness. Lining the entire uterine cavity is a spongy, porous growth. The uterine mucosa as such is not recognized, but is represented by hills and hollows. The projections into the cavity are dome-shaped and vary from .5 to 2 cm. in depth. Here and there on the surface are cystlike depressions with narrowed bands of tissue stretching from side to side. There are also numerous cavernous spaces bridged over by bands of the growth. This growth involves the entire uterine wall, both anteriorly and posteriorly. The great thickening in the wall is due to the presence of the growth, which varies from 1 to 6 cm. in thickness. At the fundus it extends almost to the peritoneal covering. The growth in no way resembles a carcinoma, nor is there any appearance suggestive of a sarcoma. One is instantly reminded of the growths that occasionally occur after a miscarriage. The cervix is somewhat flattened, is 6 cm. in breadth, and its lips appear to be normal (Fig. 7).

*Microscopic Examination.*—Sections from the cervix show little alteration save for the fact that many of the glands are small and round, and that they appear to be somewhat dilated. Here and there they extend for some distance into the muscle. They do not, however, show the slightest evidence of any active process. The tissue lining the cavity has undergone almost complete necrosis. It is still represented, however, by a great deal of canalized fibrin containing polynuclear leucocytes, and here and there, especially in the vicinity of the large blood vessels, are areas where the cells are still preserved. These consist of large discrete cells containing small vesicular nuclei, nuclei of moderate size that have stained deeply, and still larger nuclei containing vacuoles and great masses of protoplasm staining very deeply. The protoplasm of many of the cells contains vacuoles or clear spaces. In the deeper portion, that is, in the vicinity of the muscle, there are large blood sinuses, and lining these are cells closely resembling decidual cells. They have for the most part vesicular nuclei, which vary considerably in size from very small ones to others very large and lobulated. Scattered throughout this decidual-like tissue are numerous vacuoles. In the vicinity is much canalized fibrin with isolated cells of a smaller character scattered throughout it. The protoplasm of these so-called decidual cells, wherever situated, is of a brownish tinge. At numerous points are isolated masses of these decidual-like cells lying perfectly free in the blood, thus showing that they are either isolated and free masses or finger-like projections cut across. In some places are large plaques of protoplasm containing six or more nuclei, and in the immediate vicinity the canalized fibrin contains collections of polymorphonuclear leucocytes. At a few points are elongated, very deeply staining masses of chromatin lying free in hyaline material. The line of demarcation between the muscle and the new growth is at some points sharply defined, but in numerous places the cells of the new growth are wandering in and completely overwhelming the muscle fibers. In the advancing margins there is a certain amount of small round-celled infiltration, and in the corresponding deeper portions there is a great tendency for the growth to undergo coagulation necrosis. This is undoubtedly a chorioepithelioma, but one in which no placenta villi are demonstrable.

*Remarks.*—The contour and general form of this growth before the uterus was opened corresponded almost identically with those of a myomatous uterus. There was on the left side a slightly nodular elevation which was most suggestive of myoma. Curettings, of course, in this case would have yielded nothing but necrotic tissue, but this should immediately have put us on our guard. Such a finding would exclude myoma and would also tend to rule out adenocarcinoma, as in an adenocarcinoma such extensive areas of coagulated necrosis are rarely to be found.

*Histologic Examination of Scrapings Four Months Before Admission to Hospital.*—These scrapings were made by Dr. Holland and fortunately had been put aside and were examined after the removal of the uterus. It will be seen that although there are a few suspicious changes no positive diagnosis could have been made.

Gyn. and Path. 10275. The greater part of the tissue is entirely necrotic; it takes the eosin stain, or when the hematoxylin is noted the cells are very cloudy. In some places there are shadows of very large nuclei and here and there the nuclei are still perfectly preserved. These, however, are elongated, some of them are irregular and stain deeply. The picture is not one that would enable a pathologist to make a satisfactory diagnosis. There are, however, islands that strongly suggest sarcoma or that, considered in conjunction with the history, suggest a malignant placental growth. The section is one that would certainly call for further examination.

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## THE PREFERABLE METHOD OF ANTERIOR FIXATION OF THE UTERUS WHEN THE ABDOMEN IS OPEN.

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(*Continued from page 1490.*)

affecting a decided change in the direction of traction. The operation has the disadvantage that it requires extensive dissection and handling of tissues deep in the abdominal wall.

Of the various methods of utilizing the round ligaments after the abdomen is open, the one I have found most useful is practically the Gilliam-Ferguson operation. Instead of following the usual technic, however, I find that the work can be more conveniently and expeditiously executed by passing a puncturing tenaculum forceps (Fig. 1) through the wall, grasping the ligament directly and bringing it out along the forceps track. The exact technic preferred for the class of cases under consideration is shown in detail in the following steps:

1. The special work for which the abdominal cavity was opened having been completed, the left round ligament is grasped with an ordinary tenaculum forceps about 1½ inches from the uterus. The right ligament is caught in a similar manner with another forceps and then any retractors that are in the way are removed from the abdominal wall. The grasping of the ligament of each side with the tenaculum forceps facilitates the subsequent manipulation of the ligaments, after the removal of the retractors which expose the pelvic cavity.

2. The point of the puncturing tenaculum forceps is entered in the left side of the wound just beneath the upper sheath of the rectus muscle and about one inch above the pubic bone. It is passed outward just beneath the sheath for an inch and then the point is directed downward and made to puncture the rectus muscle and posterior sheath, but not the peritoneum. Guided by the fingers in the abdomen, it is then passed outward between the peritoneum and the aponeurosis to a point about one inch from the internal inguinal ring, where it is made to penetrate the peritoneum. The handle of the instrument is then raised so as to direct the point toward the round ligament and is made to grasp the ligament and peritoneum 1½ inches from the uterus (Fig. 2).

In the class of cases under consideration, the ligament and peritoneum are usually so stretched and lax that they are easily drawn into the new canal as a small cord. If the ligament is unusually thick or if the peritoneum is so thickened that it probably will not pass easily into the forceps canal, a window may be snipped in the peritoneum in front of the ligament and the ligament alone grasped and brought into the canal.

3. The forceps is then withdrawn, bringing the ligament with it into the forceps track and out at the ab-

dominal wound (Fig. 3). The loop of ligament brought out is now caught and held by an ordinary tenaculum forceps, while the right ligament is brought out in a similar manner. After the ligaments are brought into position the tension is adjusted. It may be necessary to bring out a little more of the proximal portion or a little more of the distal portion, the former to bring the fundus well forward and the latter to close effectively any space that may exist between the distal portion and the parietal peritoneum. By paying attention to this latter point the peritoneal puncture may be made a considerable distance from the internal inguinal ring without leaving any opening through which an intestinal coil might slip. If fearful on this point, the forceps may be carried to within half an inch of the ring or even practically to the ring before puncturing. The peritoneum being freely movable on account of the loose subperitoneal tissue, is drawn inward and puckered when the proximal portion of the ligament is drawn on to bring the uterus forward. This brings the peritoneal exit near the aponeurotic exit of the new ligament, near the outer margin of the rectus muscle. The direction of the new ligament, therefore, is forward, practically the same as in the Gilliam-Ferguson operation by the regular technic.

4. The ligaments are then fastened in their new position. If long enough the loops are overlapped in the median line and fastened to each other and to the upper sheath of the rectus. If not long enough to reach to the median line, they are fastened securely in the forceps track by catgut sutures passed through the upper sheath and the ligaments beneath. The abdominal incision is then closed in the usual way.

By the method just detailed, the ligaments may be transplanted into the abdominal wall very quickly—giving a strong, reliable forward and upward traction to the uterus and adnexa and without any free bands or dangerous adventitious openings. The advantages of this particular technic in suitable cases over the usual technic of the Gilliam-Ferguson operation is that it simplifies and expedites the work by doing away with the temporary ligation of the ligament and also with the lateral puckering suture.

The puncturing tenaculum forceps here mentioned may be used with advantage in the regular Gilliam-Ferguson operation. It may be used also in those operations in which the puncture of the aponeurotic wall is made practically at the internal inguinal ring, though care must be exercised that the deep epigastric vessels be not injured.

I designed this puncturing tenaculum forceps some time ago and after considerable experimenting have about what I want. I have been using it now for a year and have found it so convenient and satisfactory that I thought it worthy of presentation as a useful addition to our armamentarium.

I have used it both with the ordinary longitudinal incision and with the transverse incision. It is strong and slender and is designed to pass easily through the tissues of the abdominal wall, to penetrate the aponeurosis and peritoneum at any desired point, to grasp the round ligament firmly without bruising it and to return through the wall, bringing the ligament along the new canal. Possibly some one has already described such a forceps; if so, it has escaped my notice. Both the Gilliam forceps and the Barrett forceps are radically different.

### WHEN THE ROUND LIGAMENTS ARE FIXED.

In this class come those cases of retrodisplacement in which there is fixation of the round ligament and adjacent tissues so that it is not practicable to draw into the wall either the round ligament and adjacent peritoneum or even the round ligament alone.

Such fixation may be due to inflammatory infiltration, associated with salpingitis, peritonitis or cellulitis, or it may be due to the way the ligatures are placed in removing a damaged tube or ovary. Unless particular care is exercised in excising the damaged adnexa, the tissues are likely to be fixed by the ligatures; in fact, when mass ligatures are passed and tied before the uterus is brought well forward the organ may be so fixed by the ligatures that it can not afterward be brought forward satisfactorily. To prevent this it is well to avoid mass ligatures and to bring the uterus well forward before tying any ligatures that may interfere with its mobility.

In these cases the round ligaments are so fixed by inflammatory infiltration or other abnormal condition that the lateral implantation operation can not be satisfactorily carried out. In these cases the choice lies between ventrosuspension and the regular Gilliam-Ferguson operation with very short ligament loops. The latter, I think, is the preferable operation of the two, for the reason that the suspension cords are stronger and more enduring and there is no free band in the peritoneal cavity with which the intestines may become entangled. Also the lateral sutures may be passed so as still better to elevate the prolapsed adnexa. Furthermore, there is little or no chance of a firm fixation by scar tissue that would interfere with pregnancy.

In the execution of the regular Gilliam-Ferguson operation, the puncturing tenaculum forceps is exceedingly convenient for puncturing the rectus muscle, catching the ligament at the desired point (Fig. 4) and bringing it out through the muscle. A short one, only slightly curved, would be more convenient in this particular operation, though the long one may be used.

In the class of cases under consideration, it is seldom that the broad ligament tissue is so infiltrated that the round ligament can not be brought out the short distance required for this operation. In such an extreme case, regular ventrosuspension would be required.

Fastening the uterus forward by attaching the fundus to the vesical peritoneum seems hardly sufficient for the necessities of the case. In nearly all cases of troublesome backward displacement there is also considerable downward displacement which has an important bearing on the patient's distress. Any operation carried out for the retrodisplacement should overcome also the prolapse of the uterus and adnexa. The uterus should be held up as well as forward, and ordinarily this can not be accomplished satisfactorily by simply bringing the fundus forward and fastening it to the vesical peritoneum.

### WHEN THE CERVIX IS TOO FAR FORWARD.

In the cases of this class the cervix comes so far forward that the uterus does not have the proper forward inclination even when the fundus is brought well into the front part of the pelvis. The raising of the fundus and the adnexa relieves the symptoms for a time, but the position of the uterus with the body still directed straight up or slightly backward is such that the intestines run in front of it and sooner or later it is forced backward again into a troublesome retrodisplacement.

The cause of the cervix being so far forward is the lax condition of the supporting structures, particularly the

sacrouterine ligaments. Occasionally the cervix is held forward by shortening of the tissues anterior to the cervix from inflammation or other cause. When this is the case the contraction should be overcome by stretching or incision before an attempt is made to fasten the uterus forward. Generally, however, the tissues are lax all around the cervix.

In these cases, in addition to fastening the fundus forward while the abdomen is open, the cervix should be drawn backward and raised by shortening the sacrouterine ligaments. This is accomplished by means of a puckering suture. Bovée has probably done more in the development of round ligament shortening by various methods than any one else.

We are interested now only in the shortening when the abdomen is open. With good exposure of the pelvic cavity and the intestines packed out of the way there is not much difficulty in accurately placing a suture that, when tied, will effectually pucker the ligament and lift the cervix upward and backward. As Dr. E. C. Dudley has pointed out, the suture should be passed rather superficially so as to avoid injuring vessels and other structures near the pelvic wall, and the surfaces to be brought together should be roughened so that agglutination will take place and adhesions follow. Both sutures could be placed before either are tied, for when the cervix is drawn back close to the rectum it is difficult to place a suture satisfactorily in this region.

In most of these cases of relaxed sacrouterine ligaments there has been marked laceration of the pelvic floor, the repair of which is indicated as a part of the operative work. Occasionally, however, such a condition of the sacrouterine ligaments is found in patients who have borne no children and have no laceration of the pelvic floor.

In cases with laceration, repair of the pelvic floor for the purpose of holding the cervix well back in the pelvis sometimes proves insufficient, the constant pressure of the unsupported cervix causing gradual stretching of the repaired floor and finally descent of the cervix to its old position and a return of the retrodisplacement. In these cases, shortening of the sacrouterine ligaments while the abdomen is open, in addition to fastening the fundus forward, adds much to the completeness and permanency of the replacement and may make the difference between success and failure in the final result.

### WHEN THERE IS CONTRACTION OF THE POSTERIOR PART OF THE BROAD LIGAMENT.

There are certain cases of retrodisplacement with extensive chronic inflammation in which, after removing a disorganized tube and breaking up the adhesions posterior to the uterus and broad ligaments, there is still so much inflammatory infiltration limiting the mobility of the uterus that it can not be brought well forward without danger of injury to important structures or such resulting tension as will cause distress. The question is: What is the best procedure in such a case? Shall we persist in trying to loosen the uterus so that it will come far forward, at the risk of an injury to the large vessels along the pelvic brim which are firmly imbedded in the infiltrated tissue, shall we fasten the fundus forward to the abdominal wall under strong tension, or shall we leave it in its perpendicular or slightly backward position?

I think that, as a rule, the last-mentioned plan is the best in these exceptional cases. The principal symptoms are due to the inflammatory mass, which has been removed. Usually the uterus can easily be brought forward to a position midway between the normal position and decided retrodisplacement, and this position, when maintained, practically never in itself causes troublesome symptoms.

Whether the uterus will stay in this elevated position or return to its former one depends on whether the tissues are pliable and the uterus movable. If they are, the uterus will not stay in this midposition; but when the tissues are fixed by infiltration, this with the scar tissue that results from the removal of the diseased tube or tubes so fixes the uterus that it is likely to be held in that position indefinitely.

To favor the maintenance of the uterus in this position, care should be taken, before closing the abdomen, to see that the intestines extend into the posterior part of the pelvis and that the omentum comes down over them and is, when long enough, tucked in back of the uterus. The intestines and omentum back of the uterus assist in holding the latter forward during the healing process and also tend to prevent adhesions which extend directly from the uterus to the posterior pelvic wall, the contraction of which would draw the uterus further back.

In certain of these cases some of the structures alongside of the uterus on one or both sides may be fastened forward, thus helping to maintain the uterus part way forward both during the healing process and afterward. In one especially troublesome case of this kind I was able to secure a satisfactory result by suturing the upper anterior margin of the broad ligament to the anterior abdominal wall for a considerable distance inward from the pelvic margin on each side.

In the after-treatment of the cases of this class, it is well to have the patient lie on her side and well forward, partially on the abdomen, most of the time, and not much on her back. If the cervix comes low, it is well also to have the patient wear a pessary that will hold it well back in the pelvis during the healing process, provided the instrument causes no severe pain.

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## TREATMENT OF TRAUMATIC GANGRENE.

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In this brief paper it is my intention again to call attention to a procedure which in my experience has proved of great utility in the management of these most troublesome and often fatal cases. I shall not take up the pathology of traumatic gangrene, but shall confine myself to a consideration of its treatment. By the term traumatic gangrene as herein used is to be understood that variety of gangrene following severe crushing injuries of the extremities complicated by virulent and often rapidly fatal sepsis.

On referring to the literature we find all authorities agree as to the extremely high mortality of this affection, Cheyne and Burghard giving it as high as 95 per cent. All authorities likewise agree that the only treatment of cases of this class is early amputation above the gangrenous area.

How often are we able to determine accurately the limits of the disease, particularly in those cases of rapidly spreading moist gangrene? Too often we are disappointed by the continuation of the process after amputation and are compelled to reamputate much higher, in spite of which the patient often dies.

If the gangrenous process does not involve the entire limb, the flaps frequently slough, necessitating another operation and the sacrifice of what is too often most valuable tissue so far as the future usefulness of the part is concerned. In other cases I have been convinced by subsequent events that in my effort to get well above the disease I have sacrificed tissue which might have been saved. In other words, I have amputated at a point higher than was necessary.

In casting about for the probable cause of the unsatisfactory course pursued by many of these cases, I became convinced that it was the attempt to form flaps from tissue, the vitality of which is always seriously in question, and the further impairment of that vitality by two procedures necessary to this method of operation: first, the dissection of the flaps; second, the introduction of sutures.

The dissection of the soft parts into suitable flaps necessarily interferes with their blood supply, which interference in the class of cases under consideration is often badly borne and frequently resented by sloughing of the flaps or the rapid extension of the gangrenous process up the limb. The introduction of sutures at this time has two distinct disadvantages: first, the retention within the wound of infectious elements which may have traveled up between the muscle planes or along tendon sheaths to a point higher than we may believe probable; second, the further interference with flap nutrition by the tension of the suture, for tension can not be entirely avoided, no matter how carefully the sutures may be placed. Believing the statements above made to be true, and that the bearing of these facts on the results secured in these cases was most important, in 1902 I described a method of amputation which had, in my hands, greatly reduced the mortality of traumatic gangrene. Since then I have had several opportunities to demonstrate further the value of the method.

The procedure is as follows: Being confronted with a case of traumatic gangrene of an extremity, estimate as exactly as possible the line between the diseased and healthy soft parts. Under anesthesia make a most careful and complete disinfection and cleansing of the skin, puncturing all bullæ and remove all discharges, envelop the gangrenous area in a sterile towel up to the line selected and then, at this point, make a circular amputation, cutting through soft tissues and bone at the same level. Ligate carefully all bleeding points, including none of the perivascular tissue in the bite of either the forceps or the ligature. Leave the wound open, not introducing a single suture, and apply moist dressings of gauze saturated with salt solution, these dressings to be changed from two to four times in twenty-four hours, as the circumstances of the particular case demand.

After seven to ten days, if the wound is perfectly clean and the condition of the patient favorable, the classic circular amputation may be made by dissecting up the flap already outlined and sawing the bone at the proper level. If for any reason the circular method may seem undesirable, any other procedure may be substituted, but in the class of cases under discussion a typical circular amputation will be found entirely satisfactory.

It is unnecessary to report in detail the cases treated by this method, but it may be stated that since adopting it in 1900 I have employed it nine times: twice in amputations in the subtrochanteric area, twice in the middle third of the thigh, four times in the upper third of the leg, and once in the forearm. The results were eight recoveries and one death.

The two cases of subtrochanteric amputation will be briefly described, as they presented all the difficulties common to the most severe and fatal types of traumatic gangrene.

CASE 1.—A boy, aged 12, was run over by a disc harrow and the left leg frightfully mangled to condyles of femur. Brought to hospital by Dr. Evans of Emerson, Neb., on the third day after the accident, at which time gangrene had reached the lower third of the thigh and presented the usual clinical features of traumatic gangrene. The patient was delirious, having a temperature of 104 F. and a pulse of 136. Amputation as above described was made immediately at a point just below the great trochanter. Pulse and temperature reached normal within forty-eight hours, delirium had disappeared and the wound appeared clean. On the tenth day after the injury tetanus appeared and for four days death was hourly expected. Following the usual treatment, complete recovery from tetanus occurred, and two weeks later the flaps were dissected up, the head of the bone disarticulated and good union was secured. Since this time the patient has been well.

CASE 2.—J. M., man, aged 40, fell under a slowly moving train and sustained a severe crushing injury of the right foot and ankle. He was brought to the hospital thirty-six hours later by Dr. Langley of Oacoma, S. Dak. At this time gangrene had extended to the malleoli and the patient's condition was good. Not realizing the gravity of the case and thinking that, owing to almost total absence of constitutional symptoms the case was one of ordinary gangrene due to thrombosis, I made a classical amputation just below the knee. Twenty-four hours later pulse was 110 and temperature 102 F. The flaps looked suspicious. Thirty-six hours later the pulse was 158, temperature 105.5 F., and the patient in a low muttering delirium. There was gangrene of the flaps and discoloration to the middle third of the thigh. Realizing that prompt separation from the gangrenous and infected leg gave the only chance of life, I decided to reamputate.

The patient's condition would not permit use of general anesthesia and, owing to the condition of the limb, local anesthesia was considered inadvisable. With no anesthesia whatever amputation through bone and soft tissues as described was rapidly made slightly below trochanter. Owing to advanced sepsis the senses of the patient were so obtunded that he gave no evidence of pain except at the moment the knife severed the sciatic nerve. Despite the fact that we expected this man to die on the table or soon after, he began to manifest improvement a few hours after the operation. In twenty-four hours his pulse was 120 and temperature 101 F. Forty-eight hours later pulse and temperature became normal and so remained. Twelve days later, the wound being clean, flaps were dissected up and the bone sawed through at the trochanter and the wound closed. Primary union was secured, stitches were removed on the eighth day and the patient was up and about the ward on crutches. Was told one day that he might leave the next morning for home and that night died suddenly of pulmonary embolism.

The stump was absolutely clear and union perfect. This was the most desperately sick patient I have ever seen recover from gangrene and one on whom I could not think of operating by any other method. His tragic death after apparently complete recovery was particularly unfortunate and should not be charged against this particular plan of operation, as it might have followed any operation.

As my results by the old method can not be compared with those secured by this, I have ventured to present the operation for consideration. Its advantages may be summarized as follows:

1. By it we may speedily and with the minimum of shock remove from an enfeebled and exhausted patient the source of infection, namely, the gangrenous tissue.

2. We may frequently make the amputation at a lower point than would be possible by the old method, because

soft tissues whose vascular connections are left undisturbed are less apt to slough.

3. The freest possible drainage is provided for a sufficiently long time.

4. If the disease stops at the line first chosen, no unnecessary sacrifice of tissue has been made, as the flaps have been defined at the lowest limit of safety, and the bone would necessarily have to be sawn at the same point as at the second operation.

5. If the limits of the disease have not been placed sufficiently high, the same procedure may be repeated with less danger to the patient than a typical reamputation.

6. Patients too weak and prostrated by sepsis to withstand a typical amputation may endure this much shorter procedure and be built up during the interval before the second operation is necessary.

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## IS EYESTRAIN EVER AN ETIOLOGIC FACTOR IN EPILEPSY?*

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In reporting the following four cases of epilepsy in which the active causative agent appears to have been eyestrain and in which correction of the refraction errors relieved the greater affection, I am actuated by a desire to aid in promoting the educational work that other ophthalmologists have been doing in this direction, and possibly to benefit some other sufferers, rather than to enter into the dispute regarding the relationship of eyestrain to epilepsy. My own observations convince me that an epileptic seizure may be induced by reflex action from an ocular disease. There may be some physicians who do not want to be convinced of this, there are certainly some who deny the possibility of the eyes playing any important part in connection with epilepsy, and the great mass of the profession has probably never given any consideration to the matter and would have no answer prepared for the question expressed in the title of this paper.

The primary reason for stating the question is that it may serve as the basis for a dispassionate consideration of the subject, for it is an important matter that the proper answer should be determined and, if it be in the affirmative, as many of us believe it will be, it is equally important that the general profession should be so informed and should apply that knowledge for the prevention or alleviation of human suffering. It has been estimated that there is one epileptic in every 500 inhabitants in this country; applying that to the city of Baltimore, let us say, would mean that we have nearly 1,200 victims of epilepsy; or, furthermore, about 2,000 in the state of Maryland. Surely, it is worth while to give serious consideration to any disease that afflicts so many citizens in a community. Another most excellent reason for investigating any agency that might, even remotely, contribute as a causative factor is found in the fact that, when once it is firmly established, this disease has a bad prognosis. The percentage of patients cured by any or all forms of treatment is extremely small; the reports of some institutions in which epileptics are treated would seem to indicate that less than 1 per cent. are ever restored to health. The saving of an individual, then, from the development of epilepsy or the cure of one in whom the disease had started is like snatching a brand from the burning! If only one case in 100 is found to be due to eye disease and curable by the proper treatment of that organ, it becomes possible to double the present percentage of cures.

Whenever one reports the cure of a series of cases of some disease which is admitted to have a grave prognosis and in which the percentage of cures by any treatment is exceedingly small, he may expect skepticism on the part of his hearers and perhaps some doubt as to his diagnoses. While the diagnosis in my cases was vouched for by others, I have taken pleasure in fortifying my knowledge of the disease by a recent careful reading of the latest authoritative publication on the subject, i. e., Epilepsy and Its Treatment, by William P. Spratling, superintendent of the Craig Colony for Epileptics, published in 1904.

I may be pardoned for quoting extensively from this book, for Dr. Spratling does not advocate the idea that eyestrain bears any relation to epilepsy, and probably did not dream that his book would ever be used to support such a theory. I believe, however, that he submits the best of evidence in support of that theory, and that his opposition to the theory in other writings, as well as in his book, is not only unjustified by, but is in defiance of his own observations.

What is the etiology and pathology of epilepsy? Regarding its etiology, Dr. Spratling says (page 58):

> We may assemble the causes of all epilepsies primarily under two heads: Predisposing and Exciting. Under the former will be studied the comparatively few factors that prepare the individual to acquire the disease, but which may not actually produce it; under the latter, as many as possible of the numerous factors that actually produce epilepsy with or without the aid of influences that predispose to it.
>
> In the majority of cases predisposing and exciting causes play a part and are complemental to each other. This well-known fact we may illustrate in this way: Given an individual in whom epilepsy may be induced under the influence of some irritation of which the climax—i. e., the point at which it causes the seizure to appear—is represented by 100. If there are already present 60 of these points from, we will say, a predisposition due to heredity, there will remain but 40 points to be supplied by some exciting cause to bring the disease to light; this exciting cause being, perhaps, one of the specific fevers, some kind of toxemia, an emotional shock, an acute attack of indigestion, trauma, some reflex irritation, or numerous other causes which will be fully described later on. In other words, epilepsy, etiologically considered, is often a symptom-complex dependent in the great majority of cases on two variables; either a maximum of inherited influence combined with a minimum of exciting cause, or a minimum of inherited influence combined with a maximum of exciting cause.

No one will question the importance of an hereditary predisposition in many cases, especially in those cases of direct hereditary transmission of epilepsy or in which the child acquired its predisposition from a parent who had some other nervous disease, such as alcoholism or insanity. The exciting causes are the ones bearing particularly on our question, and I would call attention to the list mentioned in the above statement regarding etiology. It will be noticed that with the exception of toxemia and trauma all of the exciting causes named must act reflexly. Just what that process of reflex action may be is not positively known, but it would seem most plausible to assume that, through the abnormal function of certain organs, toxins may be set free which will seriously injure the delicate structures of the cerebral cor-

* Read at the meeting of the Section on Clinical Medicine and Surgery, Baltimore City Medical Society, Dec. 7, 1906.

tex when brought into contact with them. The same author says on pages 326 and 328:

The essential poison in epilepsy is a nuclear poison which shows a special predilection for certain delicately constituted cells of the cerebral cortex, typical of the second layer. . . .

The majority of good observers in chemical pathology believe that the blood, sweat, urine and gastric contents are hypotoxic in the interparoxysmal state of epilepsy; hypertoxic just before a fit, at the time of and for a variable period just after the fit.

Whether the chemical substance, which, by its poisonous effect on the cerebral cortex produces epilepsy, be carbonate of ammonium or cholin or xanthin or some undetermined autocytotoxin, is of no consequence to us at the present moment. What is of some importance, and seems to be known definitely, is that in certain persons predisposed to the disease any agency which can induce the formation, or liberation, into the circulation, of the necessary poisonous substance in sufficient quantity to cause an epileptic explosion, by its action on the brain cells, may properly be called an exciting cause of epilepsy. That the formation or liberation of such poisonous substances may be caused by reflex action is set forth by Dr. Spratling in the above-quoted statement concerning the etiology of epilepsy and supported by numerous cases related in his book. The list of reflex exciting causes given there (pages 75-122) are dentition, emotional shock, prolonged anxiety, grief or overwork, gastrointestinal disorders, disorders of menstruation either functional or organic, the menopause and pregnancy, masturbation and stricture of the urethra. Nasal and ocular diseases are mentioned as having been claimed by some writers as the cause of epileptic attacks in some instances, but he has not seen any cases due to abnormal nasal conditions, and concerning eyestrain, says:

I am unable to recall a case of epilepsy in all of my experience in which I felt that defective ocular conditions alone caused the disease.

Let us consider some of the above-named admitted excitants which may properly be compared with nasal or ocular affections as reflex causative factors in epilepsy.

*Dentition.*—Dr. Spratling says of this:

It has long been my belief that dentition when severe, and acting on an organism that bears the impress of transmitted weakness of a necessary kind, plays an important rôle in the production of epilepsy in early life.

This view is supported by such eminent neurologists as Gowers, Feré, Hammond, Peterson, Clouston and Voisin. Surely one would be justified in asking, if dentition, why not eyestrain?

*Gastrointestinal Disturbances.*—Under this heading Dr. Spratling says (page 110):

The epilepsies due to derangements of this part of the nutritional system are, in my opinion, of greater importance than they are generally supposed to be. By gastrointestinal disorders I do not mean so much to include diseases of the alimentary tract, like chronic diarrhea and ulcers of the stomach, as I do acute indigestion and intestinal toxemias. Irrespective of the absorption of poisonous matter into the blood from the alimentary canal, the irritation of the peripheral nerves (vis-ceral) in this locality may alone cause reflex convulsive phenomena that may persist as epilepsy.

Now, if irritation of the peripheral nerves of an organ like the stomach can produce epileptic attacks, why may not irritation of the ciliary nerves of the eye? It can hardly be claimed that the nerves supplying the muscles of the eyes, intraocular and extraocular, are not as constantly employed or as much abused as those of the stomach. The eye muscles, the ciliary muscles particularly, are working every waking moment of the individual's life; what an opportunity for irritation when there is an optical defect that must be constantly compensated for by muscle action in excess of that the eye was by Nature designed to endure.

*Disorders of Menstruation; Onset of Menopause; Pregnancy.*—The same author is responsible for the assertion that either functional or organic disorders of menstruation may be causative factors in epilepsy, and that occasionally the menopause, pregnancy or maternity marks the onset of epileptic attacks.

The pathologic conditions within the abdomen, which may be a factor in causing or increasing the frequency of epileptic seizures, are generally those affecting the ovaries and uterus, the condition having persisted a sufficient length of time to set up reflex nervous symptoms. Anterior and posterior displacements of the uterus with the ovaries and tubes bound down by firm adhesions, also constitute conditions productive of reflex symptoms in various parts of the body and may act unfavorably on the patient's epilepsy.

I have no doubt whatever of the correctness of all this, but physicians who, by daily experience, are familiar with the serious reflex consequences of eyestrain, such as severe headaches, nausea, vomiting and vertigo, must smile at the notion that slight ovario-peritoneal adhesions or urethral strictures can produce more serious effects on the cerebrospinal system than it is possible for eyestrain to do.

*Emotional Shock.*—No less an authority than Gowers attributes epilepsy to shock in many instances and says: "Of all the immediate causes of epilepsy the most potent are psychic—fright, excitement and anxiety." Now, it seems to me, that if we admit all the other reflex disturbing agents, as exciting causes in epilepsy, it is perfectly ridiculous to argue against the possibility of eyestrain or nasal irritation assuming the same pathologic rôle. No one can read Dr. Spratling's report of the investigations made at Craig Colony by Drs. Gould and Bennett, and his disputes with Dr. Gould thereafter, without being convinced of his unfairness in the matter. His own figures do not bear out his conclusions and his prejudice is most strikingly shown in his refusal to consider glasses of curative value in a case which, according to his own statement, had no epileptic attacks during a period of fifteen months after beginning the use of correcting glasses and suffered a recurrence only after those glasses had been broken. It is noteworthy that in his book he says of eyestrain, that he has not seen a case in which he felt that "defective ocular conditions alone caused epilepsy." If he means by that to eliminate the predisposing factor, he is begging the question, for it has not been claimed that eyestrain or any other reflex would cause epilepsy in an individual not possessed of that weakened nervous system which predisposes to the disease. If he meant, as a casual reader of that sentence is justified in inferring, that eyestrain never produces epilepsy even in a person predisposed to the disease, he is certainly wrong. A host of competent observers, mostly ophthalmologists, have now reported cases of epilepsy cured by treatment of the eyes, either by the wearing of glasses or by the operative correction of abnormalities or defects of the eye muscles. When such reliable and conservative observers as Drs. Samuel Theobald, Myles Standish and Wendell Reber endorse the theory, or report cases of the kind observed, we can not put the question aside as hobby-riding.

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Dr. Theobald very kindly permits me to relate here a case observed in his private practice several years ago. In February, 1889, a man 37 years of age, suffering with epilepsy, consulted him because of poor vision and asthenopic symptoms. The following glasses were prescribed for constant wear: Right eye, + 3.Ds = + .50 Dc. Ax. 180; left eye, + 3.50 Ds = + .62 Dc. Ax. 180, which gave perfect vision and normal muscle balance. The patient had been subject to epileptic seizures every three or four weeks and lost at least two days a month from his work. In August, 1900, he reported that the epilepsy had been greatly improved since securing the glasses, but that recently the eyes had again become weak and he had suffered a recurrent attack. Examination disclosed the necessity for a change in the lenses and in November of the same year he reported a comfortable condition, with only slight nervousness and but one-half day's loss of work in four months.

My own clinical experience is as follows:

CASE 1.—Miss E. M. A., of Wheeling, W. Va., aged 18, consulted me at the Johns Hopkins Hospital dispensary in July, 1899. She had been under observation in the neurologic department of the same hospital for some weeks and Dr. Thomas, who made the diagnosis of epilepsy, referred the patient to me for an aural examination because of the peculiar aura in the case. She gave the history of having had epileptic attacks at frequent intervals for seven or eight years. The attacks occurred generally in the night or early morning and were repeated from two to four times a month. She awoke with a scream, threw her hands to her ears, attempted to run, and fell unconscious. The seizure was typical of epilepsy inasmuch as she emitted the peculiar cry, frothed at the mouth during the attack, usually bit her tongue and passed from the attack into a deep sleep. On the following day she was usually very weak and suffered a more or less severe headache. The preceding aura consisted in hearing musical sounds and, at times, she complained of tinnitus aurium between the attacks. An aural examination failed to disclose anything abnormal about the ears either in structure or function. During the examination she made some remark which caused me to suspect an abnormal condition of the eyes, and without any idea that this bore any relation to the epileptic condition, and with the notion solely of doing something to make her a trifle more comfortable, I prescribed a mydriatic and instituted a careful examination of her refraction. As a result of this the following glasses were prescribed: Right eye, + 2.50 Ds. = 1 Dc. Ax. 120; left eye, + 2.50 Ds. = + 1 Dc. Ax. 60. The patient was advised to remain in the city in order that Dr. Thomas might have the opportunity of studying her condition, but as she suffered no epileptic seizures during the next two months she was permitted to return to her home. I saw her about one year ago and have recently heard from her through a sister who was passing through Baltimore. Only once in these seven years has she had an epileptic attack, and that occurred at a time when she sent her glasses to Baltimore for repairs and was kept without them for a week.

CASE 2.—W. M., aged 20, referred to me by Dr. W. T. Watson on April 12, 1902. His family history presents the following points of interest in connection with his trouble; his mother is a nervous woman, although subject to no particular affections; a brother has suffered from epileptic seizures at irregular periods. Both of these boys had disliked school life, probably finding study painful, but their eyes had never been examined. The patient stated that since 10 years of age he had found it impossible to read or write, especially at night, without great discomfort. He had adopted a trade which required pretty close application during the day and secured some recreation in the evening by attending a gymnasium, where he was fond of exercising with the punching bag, a form of exercise requiring steady and active employment of the eyes. About one week prior to his visit to my office, after a hard day's work and an unusually prolonged séance with the punching bag, he arrived home feeling rather tired, and was shortly afterward seized by an epileptiform attack. His physician, who lived but a few doors away and answered his call promptly, described this to me as of typical epileptic character. An examination under a mydriatic disclosed the existence of 4.50 diopters of hypermetropia in each eye; no astigmatism could be determined either by ophthalmometer or skiascopy and glasses (+ 4 Ds.) were prescribed for constant wear. I heard nothing more of this young man, except that he had gone west, until this summer, when he came to my office to report that he had never suffered any recurrence of the epileptic attack nor headaches, but that on several occasions when his glasses had been broken, while awaiting their repair, he had been more nervous than usual, and at such times could not read with comfort.

CASE 3.—Miss E. C., of Spencer, W. Va., aged 20, consulted me Dec. 19, 1905, at the instance of her brother, a physician, who knew Miss A., the patient referred to in Case 1. She had been a victim of headaches as long as she could remember, and abandoned school work at the age of 10 years. Any effort to study or perform close work of any kind rendered her very miserable. Menstruation appeared at the age of 12 years, and shortly after that she began to have epileptic attacks. These attacks continued, occurring always during sleep, and having the character of true epilepsy; she emitted the peculiar cry, developed spasms, became unconscious, frothed at the mouth, bit her tongue, and relapsed into slumber. She would be very weak the next day and suffer intense headache. As a general rule, these attacks occurred during the week preceding or the week following her menstrual periods, but her periods were irregular and the number of attacks varied, averaging, however, more than two a month. Examination of the eyes under a mydriatic gave the following result: Right eye, + 2.50 Ds. = + .50 Dc. Ax. 90; left eye, + 1 Ds. = + 1 Dc. Ax. 90. A full correction was prescribed on December 21, and on March 20, 1906, I received a letter from her in which she says, "I did not think it necessary to write sooner as I have felt so very well since I left Baltimore. My eyes have given me very little trouble since I saw you and I have had but one very slight nervous spell, during which I was not affected as usual, but had only slight muscular twitchings, followed by headache for a few hours."

CASE 4.—Miss N. B., of Henderson, N. C., aged 19, examined March 26, 1905, at the request of Mrs. H., a sister of the patient in Case 1. She was a delicate looking girl, but with no history of hereditary disease of any kind. Her mother, who accompanied her, appeared to be of a nervous temperament, and a female cousin, daughter of the mother's sister, was reported to be subject to "nervous spells" without convulsions. Miss B. had been subject to headaches all her life, aggravated by any form of close work and particularly troublesome during the period of school life. The privilege of reading or sewing was denied her because of the knowledge that sick headache would surely follow such employment; though she had never been informed that her eyes were possibly associated with this disability. For five years she had been having "nervous attacks." These began with slight emotional and muscular disturbances. In the earlier ones the face showed rapid emotional changes and the twitching of the facial muscles was followed by general restlessness, moving the arms aimlessly or walking about the room hastily, during which time she seemed to stare into vacancy; she did not completely lose consciousness at such times. The attacks became gradually more severe and more frequent during the following year, having occasionally as many as eight a day, at the end of which period the first typical *grand mal* epileptic convulsion occurred. Occurring always at night, these epileptic seizures recurred with varying frequency, but always more than once a month, for four years. The convulsion was invariably preceded by a shriek and accompanied by frothing at the mouth and biting of the tongue. On the following day she usually suffered from intense headache, accompanied by nausea.

Inasmuch as the beginning of these nervous spells was coincident with the appearance of menstruation it was thought by the family that her troubles might be of a gynecologic nature, but three capable physicians had examined her at different times and agreed in the opinion that there was noth-

ing wrong in that region. Treatment by her family physician not proving beneficial, she was induced by the advertisements in a religious paper to try "Mrs. Converse's treatment," and for two years she had regularly taken this concoction, probably an expensive solution of potassium bromid. Making it clear to the mother that I made no pretense of ability to cure epilepsy, I informed her that, from the history of headaches I considered it important to have the eyes carefully examined, and held out in justification of this the hope of greater comfort in life even if epilepsy was not affected by eye treatment. A mydriatic was ordered, and on examination by skiascopy the following result was obtained: Right eye, + .50 Ds. = + 50 Dc. Ax. 45; left eye, + .50 Ds. = + .50 Dc. Ax. 135. An esophoria of 1 degree at infinity and 4 degrees at reading distance was converted into orthophoria by glasses giving a full correction, and with this vision equalled 20/15. I prescribed the above glasses for constant wear and told them that I believed the headaches would be relieved and that she would probably be able to read and sew with comfort, but that I could not encourage them greatly to hope for a cessation of the epileptic attacks; I was skeptical on account of the low degree of refractive error.

On May 21, 1906, this patient entered my office, and with much pleasure observed that I did not recognize her. The change in her appearance was certainly very marked, and any one might have been excused for not recalling the delicate patient I had first seen. She had been on a visit to New York and had stopped on her way home to tell me that she was perfectly well. Since she began wearing the glasses she has never had any recurrence of the headaches nor convulsions.

When I presented a part of this paper at a recent meeting of the Ophthalmologic Section of the Baltimore City Medical Society, Dr. J. Frank Crouch, in discussing the subject, related two interesting cases of his own experience, the notes of which he has kindly handed me with permission to publish herewith.

CASE 5.—Clara K., aged 13, referred by Dr. G. J. Preston in April, 1905. The child for two years had been having severe chorea, for which all ordinary methods of treatment had been tried before she was taken to a specialist on diseases of the nervous system. On their first visit, Dr. Preston informed the parents that he was going to have all her organs examined in turn to try to find some causal factor, and advised them to consult an oculist first. Under atropin I found a hypermetropia of 3.5 diopters in each eye, for which full correction was ordered. The child began to improve at once, and at the end of three weeks was entirely free from choreic manifestations. I kept her under observation for six months and saw no tendency to recurrence.

CASE 6.—Mrs. Emma Z., seamstress, was sent to me Nov. 2, 1898, by her physician, on account of severe headaches which occurred whenever any effort was made to use her eyes. Under a mydriatic the following defect was discovered and correction ordered: Right eye, + 1.25 Dc. Ax. 105; left eye, + 3 Ds., which glasses gave her 20/20 in the right and 20/30 in the left eye. After the mydriatic wore off a test of the muscular balance indicated an exophoria of 4 degrees for distance, which was increased to 8 degrees for near. The correction was worn for three months, at the end of which period a tenotomy of the external rectus of the left eye was performed, reducing the exophoria for near work to 1 degree. After the tenotomy the patient became entirely comfortable, using her eyes without pain the entire day.

"One month after operating she incidentally mentioned the fact that on account of her agitation she had forgotten to take a certain medicine which her physician had been giving to her because of fainting spells, and asked whether the operation could have any influence on her nerves, for she had had no recurrence since discontinuing her drugs, a thing which had not been possible for two years. I at once called up her physician, Dr. Wilmer Brinton, to learn the character of the attacks. To my inquiries he replied that the woman undoubtedly had epilepsy, having required large doses of bromids for more than two years. I kept close watch of this patient, making her report at frequent intervals, and at the end of two years, inasmuch as she had no recurrence of epilepsy, dismissed her."

It seems to me that such cases as the six here reported tend to prove that eyestrain is an exciting cause of epilepsy in persons whose constitutional weakness predisposes them to the disease. The removal of one reflex excitant does not, of course, cure the disease; the predisposition is always there, and if the patient be again subjected to eyestrain the attacks will probably recur, or, if the eyes be kept in perfect condition, some other exciting factor, like pregnancy, shock or great anxiety, may precipitate a convulsion. Every case of epilepsy certainly deserves a careful examination of all the special organs, the eyes included, by experts for the purpose of ascertaining and eliminating any possible exciting factor.

## Clinical Notes

### REPORT OF A CASE OF REMOVAL OF THE GANGLION OF THE FIFTH NERVE FOR TIC DOULOUREUX.

FOLLOWED BY PARALYSIS OF THE SEVENTH NERVE ON THE SAME SIDE.

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All cases of excision of the ganglion of the fifth nerve should be reported because of the comparative rarity of the operation; but an additional interest attaches itself to the case here reported because of the motor paralysis which followed.

*History.*—F. P., male, aged 32, had little of note in his personal or family history, except that his father was an alcoholic. The patient lived for a time in Arkansas, but had to move on account of malaria. He was unable to take quinin for this disease, as the drug produced a severe hematuria. He commenced having attacks of pain in the spring of 1889. For these attacks he was treated medicinally and without relief. He also had most of his teeth extracted without, of course, any good resulting therefrom. In 1904 the superior maxillary branch of the fifth nerve was excised; the operation gave him relief for a few months, but the pain returned in the latter part of the same year, when the superior maxillary branch was resected for the second time. These operations were done by Dr. Ross at the Deaconess' Hospital in Indianapolis. The last operation gave relief for a short time only.

*Operation and Result.*—On Jan. 28, 1905, I operated on the superior maxillary branch of the nerve, removing all of that portion of the nerve lying in the infra-orbital canal, and at the same time resected more than two inches of the inferior maxillary nerve. Relief from this operation was short, and in November of the same year the patient came to Hope Hospital, where I removed the ganglion. A large opening was made in the skull, the dura was lifted, the superior and inferior maxillary nerves were grasped with forceps, pulled well out of their respective foramina and divided. The ganglion was then split from before backward between the ophthalmic and superior maxillary trunks and removed. The aim was to avoid injury to the ophthalmic division of the nerve. The middle meningeal artery was not injured. The hemorrhage, as is usual, was considerable and principally venous, and was controlled by gauze packing. After the removal of the ganglion, the wound was closed with buried catgut sutures, a few strands of catgut being used as a drain. The eyelids were not sewn together. The wound healed by first intention, recovery was prompt, and the man remains, thirteen months after the operation, free from pain. Sensation in the cornea was not completely destroyed, but was lessened by the operation. On the

day after the operation, a facial paralysis was noticed on the side of the operation. This paralysis proved to be permanent.

*Microscopic Examination.*—The report of the pathologist, Dr. B. W. Rhamy, is as follows: "In the section of Gasserian ganglion I find a small amount of leucocytic infiltration, the evidence of a slight chronic inflammation. Also hyperplasia of the interstitial connective tissue, or fibrosis, and some degeneration of ganglion cells, probably from pressure. The condition here is probably the result of chronic hyperemia or inflammation."

Paralysis of the facial nerve, resulting from removal of the ganglion of Gasser, so far as I am aware, has not been reported before. There was no evidence of infection about the wound. There was no traumatism inflicted that could have involved the trunk of the facial, either inside or outside of the cranial cavity, provided it occupied, in this subject, its usual position. But two explanations occur to me, of this unusual sequel, either the paralysis of the facial was a mere coincidence or the course of the nerve was in this subject unusual.

Since this report was written, a third explanation of the cause of the facial paralysis was suggested to me by Mr. Harold Mouser, a medical student of mine, and I am inclined to regard it as the most probable one. He suggested that the facial nerve was traumatized by traction of the chorda-tympani.

## INFECTION WITH FLY LARVÆ, *ANTHOMYIA CANALICULARIS.*

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An interesting case of infection with this larvæ was brought to my observation in May, 1906, by Dr. George E. Lyon, Toledo, Ill. With the assistance of Mr. N. C. Gilbert of the University of Wisconsin, a practical zoologist, the identification was made and a search through literature revealed but seventeen cases heretofore reported, as follows: Five in America, five in Germany, and the remainder scattered throughout France, England, Sweden and the Argentine Republic, a rather wide range of territory.

*Anthomyia canalicularis* is the larva of the very small black house fly so often seen on windows. The flies, which are often found parasitic in man, lay eggs on decaying vegetables, the larvæ varying in size from ⅛ to ¼ inches in length. The body proper is long and narrow, has developed lateral branchii or gills, and is divided into segments, ten or fourteen, according to age. They are beset bilaterally with feathered bristles, two to each segment. The larvæ are light brown in color, and when passed in the stools are more or less active. They invade the intestine and produce alarming symptoms until vomited up or passed with the feces. The life of the larvæ in the human intestine is about two weeks. They are ingested as eggs and hatched out in the small intestine and are highly resistant to all forms of treatment.

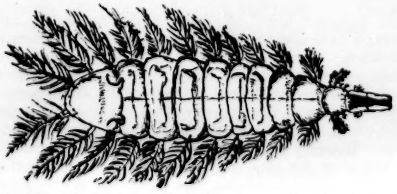
*Patient.*—B. B., male, aged 30, native of Illinois, single, weight 145 pounds, height 5 feet 5 inches, occupation rural mail carrier.

*Personal History.*—The patient's habits are good. He drank some beer last summer in hopes of gaining relief. He takes a glass only occasionally now. He lived on farm for twenty years. When six or seven years of age he was troubled with *Ascaris lumbricoides*, but vermifuges relieved all symptoms. The patient was a driver in a livery stable until 27 years old, since which time he has been a rural mail carrier. He has never been in robust health.

*Present Illness.*—Twelve years ago last June the present illness began. He felt drowsy for a week or two, and the day after a sixteen-mile ride on horseback was attacked with severe abdominal pains, which could not be relieved by home remedies. Treatment by a physician (the nature of which the patient does not know), resulted in a bloody diarrhea, followed by constipation. This condition existed for several months, and was followed by very severe pains in the region of the liver. A diagnosis of pleurisy was made at this time, but the pain continued more or less for about six years, during which interval the patient was markedly constipated. The constipation continued but the pain became transferred from the right hypochondrium to the head, where it existed when the patient was seen. During the past six years the patient has consulted many physicians; has been to various mineral springs and to the dispensary of a medical school; has taken great quantities of "patent medicine," all to no purpose.

*Examination.*—Patient's condition in April was as follows: Pulse, soft and full; eyes dull, with pupils constantly contracted; respiration normal; temperature normal; appetite indifferent; bowels sluggish; abdomen tympanitic—full even after catharsis. Urine high colored, with much uric and hippuric acid. Pain, severe; constant headache with pains radiating from lumbar region upward along the spine to base of brain.

*Treatment.*—In April this consisted of: Potassium citrate, saw palmetto, liquid couch grass, fluid extract corn-silk, sandalwood, and compound spirits of ether; capsules containing strychnin, arsencus acid; podophyllum, salol, monobromated camphor and pepsin. This treatment was continued for three weeks and resulted in loss of all pain except frontal headache, but the benefit was only transitory. The patient was then lost



Drawing of the larva of *Anthomyia canalicularis* (enlarged) (Braun).

sight of until the middle of May. On Saturday, May 19, he began eating raw pumpkin seeds and continued same without food until Tuesday morning, when a saline purge was given. At noon on Tuesday he passed about a quart of fecal matter fairly alive with the larvæ of *Anthomyia*, perhaps 1,000 or 1,500 in all. He was then put on santonin, calomel and male-fern, with no further result than to empty the intestinal tract completely. The abdomen decreased five inches in circumference and patient slept during the two following nights better than for months. An examination of the urine at this time showed nothing abnormal except some spermatozoa, few in number. Three days later a few more larvæ were passed, which showed that the whole colony did not come away at once. The patient's condition since June 1, 1906, was about the same. He continued to pass a few larvæ from time to time for several weeks after the first evacuation. He was then treated for a time by one of the foremost medical men in the middle west, until he located at Colorado Springs, from which place he was reported as improving. On January 21, 1907, the patient reported that he was feeling much better and gaining flesh. He had just returned from Colorado and engaged in business. He reported he was free from headache, but not entirely well, although no reference was made to the larvæ.

**The Evolution of Medical Thought.**—Medical science is constantly in a process of evolution. The apparent truths of today are the fallacies of to-morrow, and too often the results of the researches of many years are quickly forgotten.—E. B. Young, M.D., in the *Bull. of Am. Acad. of Med.*

## AN AMPUTATION RETRACTOR.

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For years in doing amputations I have felt the need of some sort of efficient retractor to take the place of the two-tailed or three-tailed cloth retractor commonly used. The cloth sometimes holds the soft parts away from the saw, but frequently does not, the consequence being that the muscles are shredded or bruised enough to cause sloughing, or, on the other hand, the bone is not sawed off high enough the first time.

No instrument catalogue that I know of shows an amputation retractor of any sort, and the surgeons I

Fig. 1.—The amputation retractor.

meet have not heard of such a device, so, as far as I know, I have the only pair of amputation retractors in existence. At first I used two kidney-shaped pieces of sheet copper cut out by hand. By overlapping these around the bone and bending them a little at the periphery to keep one's fingers away from the saw the success of the idea has been demonstrated in numerous amputations. Recently I asked Max Wocher & Son, Cincinnati, to follow up my idea and make me a pair of retractors with convenient handles. The cuts show the result of their efforts, with which I am well pleased.

The instruments are used in pairs and each consists of a blade to which a handle is rigidly attached at right angles. The convex edge of the blade is a part of a circle six or seven inches in diameter. The concave edge is part of a circle one and a half inches in diameter, gradually widening. The handles are six and a half inches long and attached to the stump side of the blade so as to leave the saw side of the blade smooth. In use, the blades are applied around the bone opposite each other and then overlapped until they fit the bone snugly, when the desired retraction can be made. They will fit a bone of any size, or two bones of different sizes, as in the leg or forearm. By overlapping the blades at various angles the shape of the opening can be modified at will.

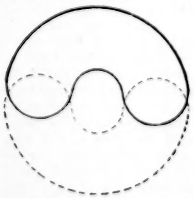

Fig. 2.—The overlapping of blades and the opening left for the bone.

**The Safe Kind of Whisky.**—Dr. Wiley, of the Department of Agriculture, according to *Harper's Weekly*, says that the safe kind of whisky is that which is bottled; "the records show that whisky left in a bottle has never injured any one seriously."

## BITE OF A POISONOUS SPIDER, *LATRODECTUS MACTANS*.

ALEXANDER L. HODGDON, M.D.
Formerly Professor of Nervous Diseases and Diseases of the Mind, Maryland Medical College, Baltimore.
PEARSON, MD.

The toxic qualities of the spider that is known as *Latrodectus mactans* are not, I believe, generally known. An appropriate name for the spider would be the "T and dot" spider, as the specimen I have seen was coal black with a red T and red dot.

Some weeks ago I was called to see a man who, pulling on his boot, had pressed on one of these spiders with the side of his foot. The spider's bite at the time caused him but little pain or inconvenience. About twenty-five minutes after being bitten, however, acute and agonizing pains occurred all over the body, being particularly severe in the region of the chest. Aqua ammoniæ was applied locally and also administered, well diluted, internally, and previous to my arrival the patient had taken considerable whisky. Morphin sulphate, strychnin sulphate and nitroglycerin were administered hypodermically, and while the latter two drugs may have helped his condition I believe the morphin was of much greater benefit. For about forty-eight hours the symptoms were most severe, the most acute pains lasting for about eight hours; the man did not feel entirely well for about ten days.

It would seem from this case that the *Latrodectus mactans* must secrete a very concentrated poison which acts, when absorbed, as a direct irritant to the sensory nerves. I am interested to know just what the active principles of this poison are.

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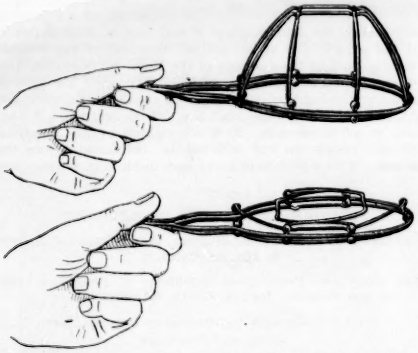
[COMMENT: The group of animals referred to belongs in the same subkingdom as the insects, from which they differ, however, in important characters. Several species have gained considerable reputation in medicine. Probably the most noted spider in this respect is *Tarantula fasciventris* of Italy, the bite of which was popularly supposed to cause the disease tarantismus or tarantula dance. Another noted spider is *Latrodectus malmignatus*, which is reported to have produced such fear in Spain in 1830 and 1833 that farmers hardly dared to leave their houses. An American species, *Phyddippus tripunctatus*, is reported as causing, by its bite, a swelling, accompanied by great pain, itching and inflammation; chilliness and fever succeed each other in rapid succession and in children and in weak persons convulsions may result; the pain is said to last several days and to disappear only after free perspiration. The so-called "bird spiders" of the tropics are nocturnal animals feared because of their poisonous bites, which are very painful, but probably not so dangerous as claimed. *Aname hentzii* is a bird spider or tarantula sometimes found in the eastern states, and *A. rileyi* is a California species with a still less savory reputation. In 1902 Dr. H. W. Crause published in the Transactions of the State Medical Association of Texas accounts of a number of cases of spider bites observed in Texas. *Latrodectus mactans* has been charged with numerous serious bites in this country, and while some cases have been alleged to end fatally, many of the accounts lack sufficient details to justify any valid judgment. Dr. L. O. Howard has shown that at least some of the cases may have been due to bites of the piratine bugs. Some cases of very severe bites due to *L. mactans* seem, however, to be well established. It is particularly on the glans penis that persons are bitten, when in box privies. —ED.]

## FOLDING ESMARCH ANESTHESIA MASK.

VICTOR F. MARSHALL, M.D.
APPLETON, WIS.

The accompanying illustrations show a modification I have made of Esmarch's anesthetic mask. The hoop wires are supplied with joints at the ring base, thus allowing the hoops to be folded on each other. This gives



a flat instrument, which lends itself easily to packing into small compass. The modification was worked out owing to the fact that the ordinary surgical and obstetric bags contain too little room. Our modern armamentarium is bulky and economy of space is desirable. The instrument is simple, durable and compact.

## A SIMPLE STERILIZER FOR EMERGENCY AND COUNTRY WORK.*

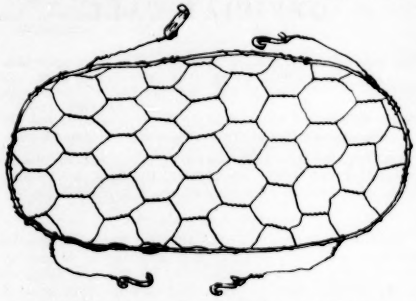
EDWARD S. STEVENS, M.D.
LEBANON, OHIO.

It is one thing to prepare for operative work with the modern pressure sterilizer and other conveniences of the hospital; it is quite another thing to prepare for the same work in a private home, perhaps on a farm at a distance from the operator's office. The device offered is purposely presented in a crude form to show what may be done under such circumstances when the element of time is important. An instrument maker could give us a more sightly instrument. All that is required is a piece of No. 9 or 10 wire, a sheet of wire netting, four cords for suspension and an equal number of metal hooks. In this case poultry netting was used, the cords were wire picture-cord, and the hooks were ordinary picture hooks. But any strong cord will answer and a hook may be speedily fashioned from sheet tin or iron.

The wire is shaped to fit loosely the inside of the house wash-boiler. The wire netting is bent and fastened over this frame, the cords are attached near the ends of the straight sides and are of such length as to let the apparatus into the boiler to within a few inches of the bottom; the hooks attached to the upper ends of the cords are placed over the upper rim of the boiler. This gives a steam sterilizer with considerable space. Boilers are usually found in one of three sizes—most commonly the No. 8.

In using this simple apparatus a few inches of boiling water are placed in the boiler, the sterilizer is hooked over the rim of the boiler, and dressings, bedding and towels may then be steamed as long as may be desired. To prevent the condensation of the steam in the sterilized articles they may be placed for a few minutes in the oven, when they will be found to be dry enough for use.

I have found this little apparatus a great time-saver

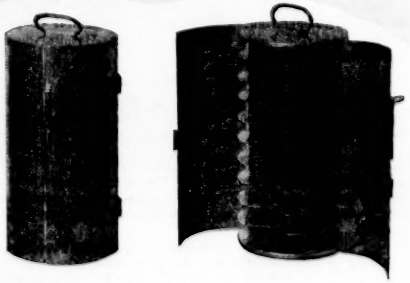


when called on for work which allowed little time for preparation. It is also a convenient article for the nurse who is sent ahead to prepare for the coming of the surgeon. By folding the cords and hooks over the wire netting it may be packed flat and is easily carried.

## AN IMPROVED PETRI DISH HOLDER.*

HAROLD O. RUH.
Assistant in Pathology, Indiana University.
BLOOMINGTON, IND.

Any one who has attempted bacteriologic work, involving the use of a large number of Petri dishes, has regretted the lack of a satisfactory Petri dish holder. No holder, satisfactory for the various procedures of sterilization, storage, plating and incubation is on the



market. To supply this defect there has been designed the holder here presented.

The figure is self-explanatory. The instrument is made of heavy tin, galvanized iron, or other material that will withstand an ordinary amount of heat and moisture, and is made with pressed joints, without solder. The apparatus has been found satisfactory, so far as tested.

* Presented at the January meeting of the Warren County (Ohio) Medical Society.

* From the Pathological Laboratory of Indiana University.

# THE ATLANTIC CITY SESSION

**American Medical Association, Fifty-Eighth Annual Session, Atlantic City, June 4-7, 1907.**

## OFFICIAL CALL

THE FIFTY-EIGHTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, TO BE HELD AT ATLANTIC CITY, N. J., JUNE 4-7, 1907.

*To the Officers and Members of the Constituent State and Territorial Associations of the American Medical Association:*

The fifty-eighth annual session of the American Medical Association will be held at Atlantic City, N. J., on Tuesday, Wednesday, Thursday and Friday, June 4, 5, 6 and 7, 1907.

THE HOUSE OF DELEGATES.

The House of Delegates of the American Medical Association will convene at Atlantic City, N. J., at 10 a. m., on Monday, June 3, 1907. The representation in the House of Delegates of the various constituent associations for the years of 1907, 1908 and 1909 will be as follows:

| | | | |
|---|---|---|---|
| Alabama | 3 | Montana | 1 |
| Arizona | 1 | Nebraska | 2 |
| Arkansas | 2 | New Hampshire | 1 |
| California | 3 | New Jersey | 3 |
| Colorado | 2 | New Mexico | 1 |
| Connecticut | 2 | New York | 11 |
| Delaware | 1 | Nevada | 1 |
| Dist. of Columbia | 1 | North Carolina | 3 |
| Florida | 1 | North Dakota | 1 |
| Georgia | 2 | Oklahoma | 2 |
| Hawaii | 1 | Oregon | 1 |
| Idaho | 1 | Pennsylvania | 8 |
| Illinois | 7 | Rhode Island | 1 |
| Indiana | 4 | South Carolina | 2 |
| Iowa | 3 | South Dakota | 1 |
| Kansas | 3 | Tennessee | 2 |
| Kentucky | 3 | Texas | 5 |
| Louisiana | 2 | Utah | 1 |
| Maine | 1 | Vermont | 1 |
| Maryland | 2 | Virginia | 3 |
| Massachusetts | 6 | Washington | 1 |
| Michigan | 4 | West Virginia | 1 |
| Minnesota | 2 | Wisconsin | 3 |
| Mississippi | 2 | Wyoming | 1 |
| Missouri | 4 | Philippine Islands | 1 |
| Ohio | 6 | | |

The twelve sections of the American Medical Association, the Medical Department of the Army, the Medical Corps of the Navy and the Public Health and Marine-Hospital Service are entitled to one delegate each.

FIRST GENERAL OR OPEN MEETING.

The first General Meeting, which constitutes the opening exercises of the scientific functions of the Association, will be held at 10:30 a. m., Tuesday, June 4.

REGISTRATION DEPARTMENT.

The Registration Department will be open from 8:30 a. m. until 5 p. m., on Monday, Tuesday, Wednesday and Thursday, June 3, 4, 5 and 6, and from 9 to 10 a. m. on Friday, June 7.

WILLIAM J. MAYO, President.
GEORGE H. SIMMONS, General Secretary.

## PRELIMINARY PROGRAMS OF SECTIONS.

### The Papers to be Read at Atlantic City—Announcement About the Official Program.

The following is a partial list of titles of papers to be read before the various sections at Atlantic City. Some other papers are also announced to be read, but the titles have not yet been received. The order here is not necessarily the order which will be followed in the Official Program. This Official Program will be similar to those issued in previous years and will contain the final program of each section, with abstracts of the papers, lists of committees, programs of the General Meetings and of the meetings of the House of Delegates, lists of entertainments, map of Atlantic City, etc. To prevent misunderstandings and to protect the interests of advertisers, etc., it is here announced that this Official Program will contain no advertisements. It is copyrighted by the American Medical Association and will not be distributed before the session. A copy will be given to each member on registration.

### SECTION ON PRACTICE OF MEDICINE.

CHAIRMAN, T. D. COLEMAN, AUGUSTA, GA.; SECRETARY, JOSEPH L. MILLER, CHICAGO.

The Early and Premonitory Symptoms of Progressive Pernicious Anemia. John A. Lichty, Pittsburg.

*Joint Meeting with the Sections on Surgery, Pathology and Physiology.*

The Physiology of the Thyroid Gland in Its Relation to Exophthalmic Goiter. S. P. Beebe.
The Pathology of Exophthalmic Goiter. W. G. MacCallum, Baltimore.
The Diagnosis of Exophthalmic Goiter. Lewellys F. Barker, Baltimore.
Passive Hyperemia of the Lungs and Tuberculosis. Wilder Tileston, Boston.
Some Observations on Digestive Condition in Pulmonary Tuberculosis. James Rae Arneill, Denver.
Investigation of the Continued Fevers of Southern Georgia. H. F. Harris, Atlanta, Ga.
Medical Treatment of Exophthalmic Goiter. Robert B. Preble, Chicago.
The Surgical Treatment of Exophthalmic Goiter. Prof. Albert Kocher, Berne, Switzerland.

The Abdominal Symptoms of Thoracic Disease. Allen A. Jones, Buffalo.
Cardiac and Vascular Accompaniments of Diabetes Mellitus. Arthur R. Elliott, Chicago.
The Venous Pulse and Some of Its Applications. L. C. Grosh, Toledo, and Arthur R. Cushny, London, Eng.
The Tone of the Respiratory Center in Tabes Dorsalis. C. F. Hoover, Cleveland.
The Study of Gastrointestinal Tract by Means of the Roentgen Rays. G. E. Pfahler, Philadelphia.

*Joint Meeting with the Section on Pharmacology and Therapeutics.*

The Etiology of Acute Articular Rheumatism. Rufus I. Cole, Baltimore.
Symptomatology and Diagnosis of Acute Articular Rheumatism. Philip King Brown, San Francisco.
The Cardiac Complications of Acute Articular Rheumatism. Alexander Lambert, New York City.

Observations on Plague in India Illustrated by Lantern Slides. Judson Daland, Philadelphia.
The Opsonic Theory and Therapeutic Inoculation with Bacterial Vaccines. G. W. Ross, Toronto.
A Critical Estimate of the Fermentation—Specific Gravity Method of Quantitating Sugar in Diabetes. Henry A. Christian, Boston.
Prepared and Predigested Foods. Graham Lusk, New York City.
Experimental Anemia. C. H. Bunting, Charlottesville, Va.
The Uncinarial Anemia of Porto Rico. Bailey K. Ashford and W. W. King, Washington, D. C.
Differential Diagnosis of the Various Types of Anemias. Richard Cabot, Boston.
Treatment of Anemia. S. J. Meltzer, New York.

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## SECTION ON SURGERY AND ANATOMY.

CHAIRMAN, A. D. BEVAN, CHICAGO; SECRETARY, HARVEY CUSHING, 3 WEST FRANKLIN STREET, BALTIMORE.

Chairman's Address: The Responsibility and Training of the Modern Surgeon. Arthur Dean Bevan, Chicago.

Intestinal Perforation in Typhoid Fever. Its Surgical Treatment, with Report of a Case. J. E. Allaben, Rockford, Ill.

An Operation for Exstrophy of the Bladder. John T. Bottomley, Boston.

Subphrenic Abscess as a Complication of Appendicitis. D. N. Eisendrath, Chicago.

Osteoplastic Operations. Prof. E. Küster, Marburg, Germany.

How May Our Present Methods of Medical Illustration be Improved? Max Brödel, Baltimore.

Gall Duct Obstruction Caused by Movable Kidney. Martin B. Tinker, Ithaca, N. Y.

The Technic of Appendectomy. John A. Wyeth, New York.

The Operation of Gastrojejunostomy and Its Physiologic Results. Hobart J. Peterson, London, Eng.

Vaccine Therapy of Surgical Infections Controlled by the Opsonic Index; Reports of Results. L. L. McArthur, Chicago.

The Pelvic Articulations, with Reference to the Differentiation Between Lesions of These Articulations and the Many Pelvic Disorders. Joel E. Goldthwait, Boston.

The Methods of Treating Tuberculous Joint Disease. John Ridlon, Chicago.

Personal Surgical Errors; Foreign Bodies in the Peritoneal Cavity, Etc. Archibald MacLaren, St. Paul, Minn.

Local Anesthesia in General Surgery. James F. Mitchell, Washington, D. C.

*Special Session on Ileus.*

Colic. Prof. K. G. Lennander, Upsala, Sweden.

Experimental Studies of Intestinal Obstruction. R. D. McClure, Baltimore.

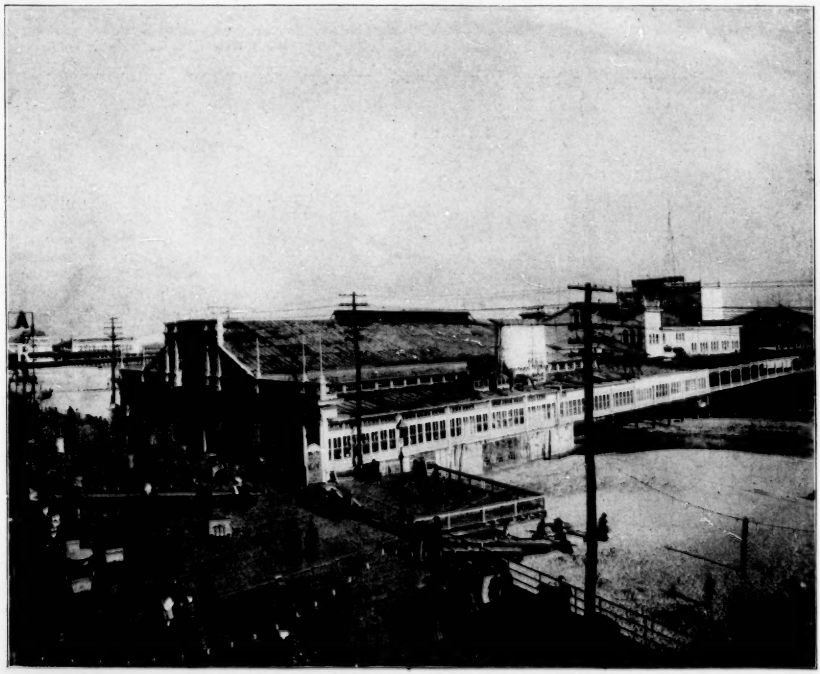

Fig. 1.—Young's Pier—Bureau of Registration and Exhibit Halls. (These illustrations are reproduced from copyrighted photographs kindly furnished by Harper B. Smith, photographer, Atlantic City.)

Bier's Treatment (Stauungs-Hyperæmie) in Chronic and Acute Surgical Infectious Diseases. Willy Meyer, New York.

*Combined Section Meeting on Exophthalmic Goiter.*

The Physiology of Exophthalmic Goiter. S. P. Beebe, New York.

The Pathology of Exophthalmic Goiter. W. G. MacCallum, Baltimore.

The Diagnosis of Exophthalmic Goiter. L. F. Barker, Baltimore.

Medical Treatment of Exophthalmic Goiter. Robert B. Preble, Chicago.

The Surgical Treatment of Exophthalmic Goiter. Dr. Albert Kocher, Berne, Switzerland.

Physiologic Observations on Experimentally Produced Ileus. Walter B. Cannon and F. T. Murphy, Boston.

The Relation of the General Practitioner to Strangulated Hernia. John B. Roberts, Philadelphia.

Postoperative Ileus. Frank Martin, Baltimore.

Dynamic Ileus. John C. Munro, Boston.

Resection for the Relief of Intestinal Obstruction. W. J. Mayo, Rochester, Minn.

Trigger Finger. Robert F. Weir, New York.

Excision of the Rectum, Sigmoid and Part of Descending Colon, with Implantation of the Colon into the Anus. Edward Archibald, Montreal, Canada.

The Direct Transfusion of Blood. George W. Crile, Cleveland, Ohio.

Diabetes in Surgical Relations. A. E. Halstead, Chicago.
Experimental Pathology and Surgical Treatment of Erysipelas. Ernest Laplace, Philadelphia.
Removal of a Migrating Urinary Calculus from the Concavity of the Ileum. W. D. Haggard, Nashville, Tenn.
Technic of Operation for Cancer of the Breast. Miles F. Porter, Fort Wayne, Ind.
The Paraffin Injection Treatment of Inguinal Hernia. M. L. Harris, Chicago.
A Case of Benign Melanosis. J. Clark Stewart, Minneapolis.
Anatomy of the Palate, Normal and Cleft. Truman W. Brophy, Chicago.
The Management of Dislocation at the Shoulder Joint Complicated by Fracture of the Neck of the Humerus. H. A. Royster, Raleigh, N. C.
The Treatment of Acute Articular Infections. John B. Murphy, Chicago.
The Results of the Operative Treatment of Deformed Fractures. Carl Beck, New York.

## SECTION ON OBSTETRICS AND DISEASES OF WOMEN.

CHAIRMAN, J. WESLEY BOVÉE, WASHINGTON; SECRETARY, W. P. MANTON, DETROIT.

Sub-total Abdominal Hysterectomy, with Total Excision of the Gland-Bearing Tissue of the Cervix and a Perfected Restoration of the Supporting Ligaments. William F. Metcalf, Detroit.
Plastic Surgery of the Pelvic Structures. Henry O. Marcy, Boston.
Buried Sutures and Ligatures, Their Material and Proper Use. Walter B. Chase, Brooklyn.
Some Advances in Ureteral and Renal Surgery. Charles Lester Leonard, Philadelphia.
The Surgical Treatment of Ureteral Calculus in the Female. Edgar Garceau, Boston.
Cystocele. Charles P. Noble, Philadelphia.
Salpingitis Caused by Appendicitis. I. S. Stone, Washington.
A Simplified Method of Operating for Cystocele. D. Todd Gilliam, Columbus.
The Early Diagnosis of Tubal Pregnancy. Philander A. Harris, Paterson, N. J.
Constitutional Ill-Equipment of the Patient as a Factor in Determining the Performance of the Primary Cesarean Section. Edward Reynolds, Boston.
The Induction of Labor to Prevent Dystocia from Excessive Size of the Child. William S. Stone, New York.

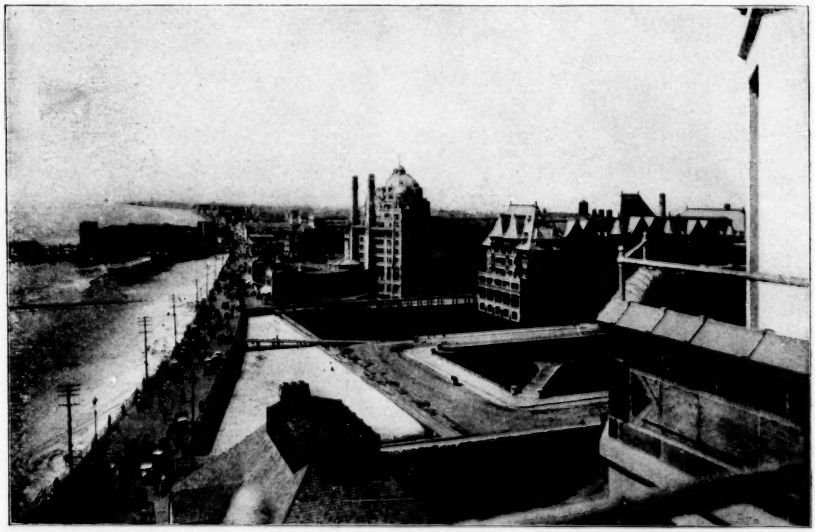

Fig. 2.—The Marlborough-Blenheim, the million dollar pier and the City Park.

Chairman's Address: The Status of the Fight Against Cancer of the Uterus. J. Wesley Bovée, Washington.
How Can We Lessen the Mortality of Uterine Cancer? E. E. Montgomery, Philadelphia.
Parasitic Uterine Myomata. Thomas S. Cullen, Baltimore.
Prevention of Peritoneal Adhesions by Adrenal-Salt Solution with Especial Reference to the Pelvis. Emery Marvel, Atlantic City, N. J.
Postoperative Intestinal Obstruction. C. C. Frederick, Buffalo.
The Prevention and Treatment of Postoperative Intestinal Obstruction. Daniel H. Craig, Boston.
Successful Treatment of Acute Postoperative Ileus by Incision and Drainage of the Intestine, with Report of Four Cases. Francis D. Donoghue, Boston.
Ovary and Ovarian Tumors in the Inguinal Canal; Rare Condition; Report of Two Cases. J. H. Carstens, Detroit.
Prolapse of the Ovary and Its Treatment. George Gray Ward, Jr., New York.
Gonorrhea in Women. H. J. Boldt, New York.
Unrecognized Gonorrhea in the Female. S. W. Bandler, New York.
Surgical Treatment of Puerperal Infection. George H. Noble, Atlanta, Ga.
Examination of Gynecologic Patient. A. H. Goelet, New York.
The Syncytium. Laura H. Branson, Iowa City, Iowa.
Uterine Sarcoma. Ellice McDonald, New York.

## SECTION ON OPHTHALMOLOGY.

CHAIRMAN, G. C. SAVAGE, NASHVILLE, TENN.; SECRETARY, ALBERT E. BULSON, JR., FORT WAYNE, IND.

Chairman's Address: G. C. Savage, Nashville, Tenn.
Address: What America Has Done for Ophthalmology. Alvin A. Hubbell, Buffalo.
Address: What Europe Has Done for Ophthalmology. R. A. Reeve, Toronto, Can.
Address: Modern Views on Physiology and Pathology of Accommodation. Prof. Carl Hess, Würzburg, Germany.
Cataract Extraction: (I) Is the Case Operable? (II) Preparation of the Patient; (III) The Anesthetic. E. E. Jack, Boston, Mass.

The Incision for the Extraction of Cataract and the Iridectomy. John E. Weeks, New York City.
The Delivery of the Lens for the Extraction of Cataract; Irrigation of the Anterior Chamber, and the First Toilet of the Wound. L. Webster Fox, Philadelphia.
The Immediate After-Treatment of Cataract Operations (with bandage). William H. Wilder, Chicago.
The Immediate After-Treatment of Cataract Operations (without bandage). J. W. Scales, Pine Bluff, Ark.
Operations for Secondary Cataract. Peter A. Callan, New York City.
Does the Opacity of Incipient Cataract Ever Regain Transparency? Leartus Connor, Detroit.
Concerning Loss of Vitreous Humor in the Operation for the Extraction of Cataract. J. M. Ray, Louisville, Ky.
Yeast Cells as a Probable Cause of Ulcerative Keratitis. George F. Keiper, Lafayette, Ind.
Ligation of the Common Carotid Artery for Malignant Recurrent Hemorrhage of the Vitreous. George S. Derby, Boston, Mass.
Neuro-Fibroma of the Orbit; Kronlein Operation. W. R. Parker, Detroit, Mich.
Metastatic Conjunctivitis in Gonorrhea. James J. Carroll, Baltimore.
The Preventive Treatment of Transferred Ophthalmitis (so-called Sympathetic Ophthalmia). Charles A. Oliver, Philadelphia.
Premiums Paid to Experience. (The Results Obtained in Private Practice from Therapeutic Measures, Compiled from a Statistical Study of 5,000 Cases.) F. T. Rogers, Providence, R. I.
The Value of Tuberculin TR as a Diagnostic and Therapeutic Agent in the Recognition and Treatment of Tuberculosis of the Eye. With Report of Cases. Charles S. Bull, New York City.
The Relation of the Circumlental Space to the Causation of Glaucoma, as Shown by the Würdemann Lamp. John A. Tenney, Boston.
Comparative Potency of Hyoscine and Scopolamin Hydrobromid in Refraction Work. Wendell Reber, Philadelphia.
The Surgical Treatment of Chronic Glaucoma. S. D. Risley, Philadelphia.
The Parabolic Reflector for Illuminating Test Charts. Mortimer Frank, Chicago.
The Treatment of Ulcers of the Cornea. H. Bert Ellis, Los Angeles.
The Treatment of Purulent Ophthalmia. George H. Price, Nashville, Tenn.

Fig. 3.—Thousands at play in the surf and on the strand. A typical bathing scene.

Some Considerations in the Treatment of Lachrymal Obstruction. Mark D. Stevenson, Akron, Ohio.
A Method of Performing Tenotomy which Enables the Operator to Limit the Effect as Required. Frank C. Todd, Minneapolis.
The Treatment of Strabismus in Young Children. A. R. Baker, Cleveland, Ohio.
The Congenital Palsies of Eye Muscles. William C. Posey, Philadelphia.
Ocular Rotations in Paresis. Francis Valk, New York City.
Ocular Neurasthenia. Hiram Woods, Baltimore.
A Protest Against the Employment of Paraffin Injections Near the Eyes. A. E. Davis, New York City.
Further Observations on Retinitis Punctata. H. Gradle, Chicago.
Myopia Associated with Opacities of the Cornea. W. L. Pyle, Philadelphia.
Indications for the Employment of Adrenalin Chlorid, in Connection with Cocain, in Operations on the Eye. Samuel Theobald, Philadelphia.
The Treatment of Iritis. E. C. Ellett, Memphis, Tenn.
The Treatment of Interstitial Keratitis. H. H. Martin, Savannah, Ga.
The Treatment of Recent Trachoma. Thomas A. Woodruff, Chicago.
The Treatment of Chronic Trachoma. A. E. Prince, Springfield, Ill.

## SECTION ON LARYNGOLOGY AND OTOLOGY.

CHAIRMAN, S. MACCUEN SMITH, PHILADELPHIA; SECRETARY, W. SOHIER BRYANT, NEW YORK CITY.

Chairman's Address: S. MacCuen Smith, Philadelphia.
Address: Prof. Gustav Killian, Freiburg.
Chemistry of the Saliva and Nasal Secretions, and Its Relation to Hay Fever. D. Braden Kyle, Philadelphia.
Etiology and Recent Treatment of Hay Fever. H. Holbrook Curtis, New York.
Address: Prof. Theodore Gluck, Berlin.

Anatomy of the Middle Turbinate. Hanau W. Loeb, St. Louis.
Pathology of the Middle Turbinate. Joseph L. Goodale, Boston.
Non-operative Treatment of Middle Turbinate Diseases. Joseph A. Stucky, Lexington, Ky.
The Indications for Resection of the Middle Turbinal. William E. Casselberry, Chicago.
Technic of the Operation for Removal of the Middle Turbinate. George L. Richards, Fall River, Mass.
Pathologic Results of Operations on the Turbinates. Francis R. Packard, Philadelphia.
The Treatment of Hypertrophic and Intumescent Rhinitis with the Galvano-Cautery. E. Fletcher Ingals and Stanton A. Friedberg, Chicago.
The Larynx in Locomotor Ataxia. W. G. B. Harland, Philadelphia.
Intranasal Suture. Sidney Yankauer, New York.
Demonstrations of Gastroscope. Chevalier Jackson, Pittsburg.
A New Method for All the Ordinary Sequences of Anesthesia. Victor C. Pederson, New York.
The Indications for Operative Interference in Central Affections Due to Middle Ear Suppuration. Cullen F. Welty, San Francisco.
Phlebitis Following Middle Ear Disease. James F. McKernon, New York.
Unexpected Aural Effects of a Few Ordinary Drugs. George B. McAuliffe, New York.

## SECTION ON DISEASES OF CHILDREN.

CHAIRMAN, J. R. SNYDER, BIRMINGHAM, ALA.; SECRETARY, A. H. WENTWORTH, BOSTON.

Chairman's Address: The Status of the Child. J. Ross Snyder, Birmingham, Ala.
Some Needs of Institution Children. John Ruhräh, Baltimore.
The New Era in Pediatrics; Its Causes and Scientific Foundations. G. R. Pisek, New York.
The Relation of the Physician to Defective School Children. W. C. Hollopeter, Philadelphia.

Fig. 4.—The new Traymore and Brighton Casino.

The Pathology of Middle Ear Suppuration. Henry O. Reik, Baltimore.
Acute Middle Ear Suppuration. Norval H. Pierce, Chicago.
Conservative Treatment of Chronic Suppuration of the Middle Ear. Samuel Theobald, Baltimore.
The Cleansing Treatment of Chronic Middle Ear Suppuration. W. Sohier Bryant, New York.
Ossiculectomy in Chronic Middle Ear Suppuration. Frederick L. Jack, Boston.
Some Important Surgical Relations of the Temporal Bone. George E. Shambaugh, Chicago.
The Major Operative Treatment of Middle Ear Suppuration and the Indications for the Same. Edward B. Dench, New York.
The Furtherance of Natural Repair with Reference to the Preservation of Hearing in Suppurative Otitis Media. Clarence J. Blake, Boston.
A Preliminary Report on the Etiology of Infantile Atrophy. A. H. Wentworth, Boston.
The Greatest Menace to Whole Milk in Cities' Supply. Alexander McAllister, Camden.
Certified Milk and the General Milk Supply of Louisville. Henry Enos Tuley, Louisville.
The Ferments of Milk and Their Relation to Pasteurization. Roland G. Freeman, New York.
The Disadvantages of Low Proteids in Infant Feeding. Alfred Hand, Jr., Philadelphia.
The Relation of Pathologic Conditions of the Nasopharynx to the Dental Arches. E. A. Bogue, New York.
Adenoids in Infancy. John Lovett Morse, Boston.
The Opsonic Index in the Tuberculosis of Children: Its Relation to the Tuberculin Test. Thomas Morgan Rotch, Boston.

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Prophylaxis in Cerebrospinal Meningitis. A. Seibert, New York.

The Early Recognition of Pneumonia in Infants and Young Children and Its Treatment. W. P. Northrup, New York.

Empyema in Children. Melvin W. Franklin, Philadelphia.

The Importance of the Early Recognition and Treatment of Rachitis. Thomas S. Southworth, New York.

Tardy Malnutrition; Its Treatment by Rest and Diet. Charles Gilmore Kerley, New York.

So-called Scrofula in Children. C. F. Wahrer, Fort Madison.

Symptom-Complex of a Series of Intestinal Cases in Children, with Pathologic Findings. Thomas D. Parke, Birmingham.

Four Hundred and Fifty Cases of Whooping-Cough Treated by Means of the Abdominal Belt. Theron Wendell Kilmer, New York.

Urinary Infections in Infancy. Isaac A. Abt, Chicago.

Enteroptosis in Children. W. J. Butler, Chicago.

Observations on Malformations of the Rectum and Imperforate Anus. Samuel W. Kelley, Cleveland.

## SECTION ON STOMATOLOGY.

CHAIRMAN, M. I. SCHAMBERG, NEW YORK; SECRETARY, EUGENE S. TALBOT, CHICAGO.

Chairman's Address: M. I. Schamberg, New York City.

The Necessity of a Medical Education for Dentists:

(a) From the Standpoint of the Lay Public. M. L. Rhein, New York City; H. C. Register, Philadelphia, and James McManus, Hartford, Conn.

(b) From Standpoint of Physician. V. A. Latham, Chicago.

The Common Ground of Dentistry and Medicine. F. L. Fossume, New York City.

The Mutual Developmental Dependence of the Upper Air Tract, the Jaws, the Teeth, the Face and Their Economic Importance to the Human Race. W. Sohier Bryant, New York City.

The Relation of Upper Respiratory Obstruction to Oral Deformity; Simultaneous Treatment by Expansion of the Dental Arch. Francis A. Faught, Philadelphia.

Fig. 5.—Virginia Avenue. A street of hotels and boarding-houses.

Clinical Observations in the Acute Infectious Diseases, with Bedside Notes from the Willard Parker Hospital. Practical Deductions with Therapeutic Suggestions. Louis Fischer, New York.

A Case of Spasmodic Stricture of the Esophagus. Samuel S. Adams, Washington.

An Interesting Case of Incontinence of Feces in an Undersized Boy of Six Years. Maurice Ostheimer, Philadelphia.

The Percussion of the Chest in Infants and Children. S. McC. Hamill, Philadelphia.

Essential Insufficiency of the Heart in Childhood. Arthur Willard Fairbanks, Boston.

Differential Diagnosis Between Measles and Rötheln. H. M. McClanahan, Omaha.

The Diagnosis and Treatment of Convulsions in Children. H. Lowenburg, Philadelphia.

Scarlatina and Dukes' Disease. A. C. Cotton, Chicago.

Speech Results of Cleft Palate Operations. George V. I. Brown, Milwaukee.

Technic of Lip and Palate Operations. Thomas Fillebrown, Boston.

False Statements Concerning Causes of Pathologic Conditions. S. B. Luckie, Chester, Pa.

Acid Autointoxication, the Principle Cause of Erosion and Abrasion. Eugene S. Talbot, Chicago.

Some Results from Orthodontia on the Deciduous Teeth. E. A. Bogue, New York City.

Osteomyelitis of the Maxilla. Samuel L. Goldsmith, New York.

A Case of Epidermoid Carcinoma of the Inferior Maxilla. W. H. Potter, Boston.

Pregnancy: A Factor in the Etiology of Dental Diseases. James E. Power, Providence, R. I.

The Dentist in the United States Navy. Richard Grady, Annapolis.

The X-Ray an Aid to the Stomatologist. R. G. Richter, Milwaukee.

Radiography in Oral Surgery, with Demonstrations of a Focus Finder and Ray Localizer. G. E. Pfahler, Philadelphia.

## SECTION ON CUTANEOUS MEDICINE AND SURGERY.

CHAIRMAN, R. R. CAMPBELL, CHICAGO; SECRETARY, M. L. HEIDINGSFELD, CINCINNATI.

Chairman's Address: R. R. Campbell, Chicago.

Deformities of the Vulva from Early and Late Indurating Edema. R. W. Taylor, New York City.

Ten Years' Experience with the Injection Treatment of Syphilis, W. S. Gottheil, New York City.

Syphilitic Varicella. David Lieberthal, Chicago.

Blastomycosis in an Infant. J. B. Kessler, Iowa City, Iowa.

Significance and Treatment of Itching. L. Duncan Bulkley, New York City.

The Present Status of Phototherapy. Jay F. Schamberg, Philadelphia.

An Exhibition of a Case. J. V. Shoemaker, Philadelphia.

Pemphigus. Joseph Zeisler, Chicago.

Pemphigus Neonatorum. O. H. Foerster, Milwaukee.

Opsonic Therapy in Skin Diseases. H. R. Varney, Detroit.

Onychomycosis. A. Ravogli, Cincinnati.

Roentgen Ray Technic in Dermatology. M. K. Kassabian, Philadelphia.

The Therapeutics of Tuberculous Lesions of the Skin. Granville MacGowan, Los Angeles.

Treatment of Acne and Chronic Eczema. R. H. Boggs, Pittsburg.

## SECTION ON PATHOLOGY AND PHYSIOLOGY.

CHAIRMAN, WALTER L. BIERRING, IOWA CITY, IOWA; SECRETARY, WALTER B. CANNON, BOSTON.

Chairman's Address: The Need of Medical Cooperation in Laboratory Work. Walter L. Bierring, Iowa City, Iowa.

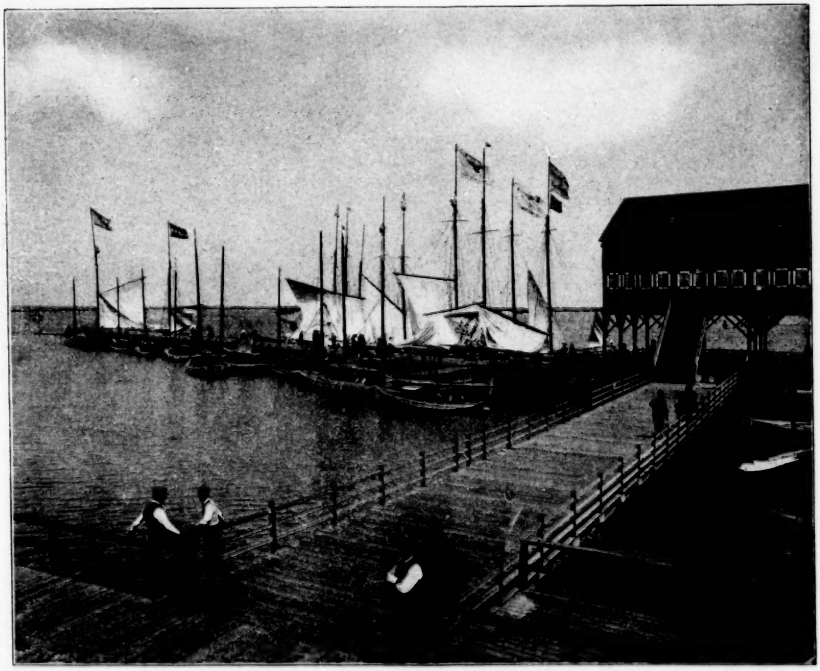

Fig. 6.—Inlet Yacht Wharf at the end of the Boardwalk.

Report of a Series of Cases of Small Pustular Scrofulide (Duhring). J. Frank Wallis, Norristown, Pa.

Report of a Case of Miliary Tuberculosis of the Skin. Grover William Wende, Buffalo, N. Y.

Seborrhoids of Face. M. F. Engman and W. H. Mook, St. Louis.

Lichen Scrofulosorum in America. H. G. Anthony, Chicago.

The Vessel Changes and Other Histologic Features of Cutaneous Syphilis. J. A. Fordyce, New York City.

The Differential Diagnosis of Syphilis (Illustrated by Lantern Slides). W. T. Corlett, Cleveland.

Lupus Erythematosus: Clinical and Pathologic Considerations (Demonstrated from Lantern Slides). M. L. Heidingsfeld, Cincinnati.

Trichopathophobia. A. D. Mewborn, New York City.

Liquid Air in Dermatology; Its Indications and Limitations. H. H. Whitehouse, New York City.

The Occurrence of Typhoid Bacilli in the Stools of Typhoid Patients, with a Discussion of the Pathogenesis of Typhoid Fever. J. H. Pratt, F. W. Peabody and A. D. Long, Boston.

Proteid-soap Compounds and Microchemical Reactions of Pure Fats and Lipoids with Sudan III and Scharlach R. L. K. Baldauf, Albany, N. Y.

Recent Work on the Mechanism of Urine Formation. Torald Sollmann, Cleveland, Ohio.

Observations on the Rate of Elimination of Uric Acid in Man. Lafayette B. Mendel and Ernest W. Brown, New Haven, Conn.

Further Observations Concerning Metabolism in Acute Leukemia and Purpura Hemorrhagica. David L. Edsall, Philadelphia.

Specific Nature of Opsonins. Joseph McFarland, Philadelphia.

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A Demonstration of the Value of the "Nephelometer" in Making Opsonic Estimations. Joseph McFarland, Philadelphia.

The Opsonic Index in Experimental Infection. L. Hektoen.

The Determination of the Alkalinity of the Blood. H. M. Adler, Boston.

The Determination of the Molecular Concentration of Blood Plasma. J. H. Young, Boston.

A Quantitative Method for the Determination of the Acetoacetic Acid in Urine. O. F. Black, Boston.

A New Indicator for Free Mineral Acids. H. M. Adler, Boston.

Experimental and Clinical Observation on Chronic Valvular Disease in the Dog. Harvey W. Cushing, Baltimore.

*Joint Meeting with the Section on Practice of Medicine.*

The Physiology of the Thyroid Gland in Its Relation to Exophthalmic Goiter. S. P. Beebe, New York City.

Adenomyoma of Uterus. Thomas S. Cullen, Baltimore.

Diffuse Carcinoma of the Stomach, Esophagus and Duodenum. Henry A. Christian, Boston.

Further Study of Peptic Ulcer. Fenton B. Turck, Chicago.

Coagulation Necrosis. D. H. Bergey, Philadelphia.

*Joint Meeting with the Scientific Exhibit.*

The Movements of the Esophagus After Bilateral Vagotomy. W. B. Cannon, Boston.

Experiments on Gastric Secretion. L. Kast, New York.

Experiments with the Proteolytic Ferments. Joseph Sailer and C. B. Farr, Philadelphia.

Experimental Study of a Probable Internal Secretion of the Salivary Glands. John C. Hemmeter, Baltimore.

Simultaneous Sphygmomanometric Pressures as Modified by Posture. Winfield Scott Hall and A. H Sanford, Chicago.

A Further Contribution to the Physiology of the Suprarenal. F. C. Busch, Buffalo.

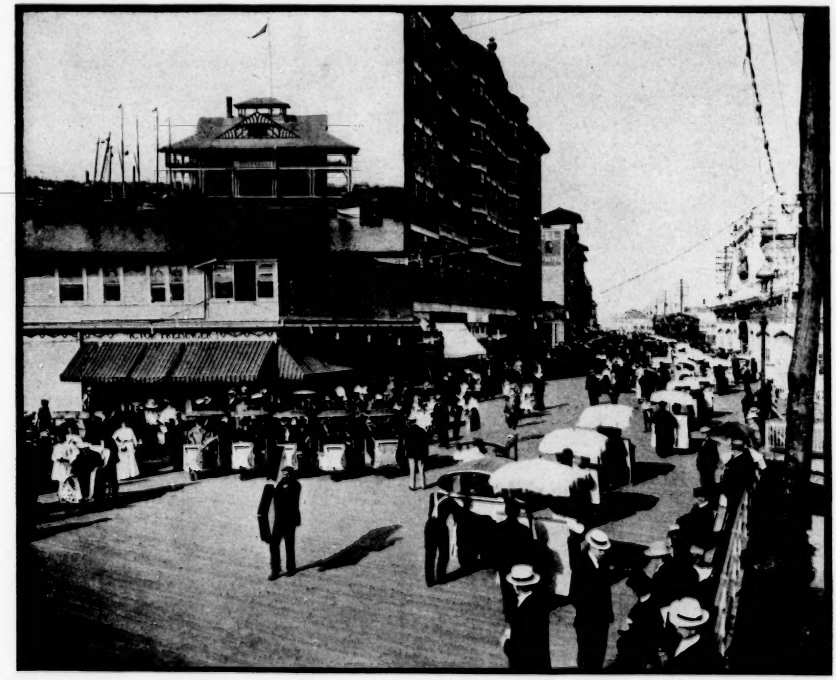


Fig. 7.—The Atlantic Yacht Club.

Fig. 8.—The Boardwalk and its roller chairs.

On the Pathology of Exophthalmic Goiter. W. G. MacCallum, Baltimore.

Symptomatology and Diagnosis of Exophthalmic Goiter. Lewellys F. Barker, Baltimore.

Medical Treatment of Exophthalmic Goiter. Robert B. Preble, Chicago.

The Surgical Treatment of Exophthalmic Goiter. Prof. August Kocher, Berne, Switzerland.

The Experimental Production of Epithelial Proliferation. Guthrie McConnell, St. Louis.

Observations on the Experimental Transplantation of Tumors in Dogs. S. P. Beebe, New York City.

The Treatment of Experimental Tumors in Dogs with Bacterial Toxins. S. P. Beebe and Martha Tracy, New York City.

Observations on the Occasional Failure of the Radial Pulses When the Arms Are Elevated Above the Head. Henry Sewall, Denver.

Further Remarks on the Causative Factor in the Production of the Dermatitis of Ground Itch (Uncinariasis). Claude A. Smith, Atlanta, Ga.

The Estimation of the Dried Weight of the Total Bacteria in the Feces and Its Clinical Significance. J. Dutton Steele, Philadelphia.

Are the Intestines Able to Propel Their Contents in an Antiperistaltic Direction? Edwin Beer and Carl Eggers, New York City.

An Explanation of the Seasonal Prevalence of Typhoid. M. J. Rosenau, Washington, D. C.

Value of Opsonic Index as a Guide to Treatment and Diagnosis. William H. Park, New York.

## SECTION ON NERVOUS AND MENTAL DISEASES.

CHAIRMAN, MORTON PRINCE, BOSTON; SECRETARY, T. H. WEISENBURG, PHILADELPHIA.

Chairman's Address: Morton Prince, Boston.

Certain Affections in Children Commonly Classed as Hysteria. William N. Bullard, Boston.

Hysteria; Its Nature and Its Position in Nosology. F. X. Dercum, Philadelphia.

Psychasthenia; Its Clinical Aspects and Nosologic Status Among Mental Disorders. J. W. Courtney, Boston.

The Motor Phenomena of Chorea. Frank R. Fry, St. Louis.

A Study of 437 Cases of Alcoholic Insanities. Alfred Gordon, Philadelphia.

The Influence of the Ductless Glands Over Metabolism, with Illustrative Cases. Leo M. Crafts, Minneapolis.

Acute Unilateral Ascending Paralysis. Carl D. Camp, Philadelphia.

Landry's Paralysis; Recovery; Partial Relapse, and Complete Recovery. John K. Mitchell, Philadelphia.

Subacute Combined Cord Degeneration, with Report of 20 Cases. Julius Grinker, Chicago.

Facial Hemiatrophy. Theo. Klingmann, Ann Arbor, Mich.

Changes in the Peripheral Blood Vessels in Erythromelalgia and Raynaud's Disease. B. Sachs, New York.

The Removal of a Subcortical Cystic Tumor at Second Stage Operation Without Anesthesia. H. M. Thomas and Harvey W. Cushing, Baltimore.

Report of a Case of Intracranial Tumor Resulting from Traumatism. William M. Leszynsky, New York.

The Differential Diagnosis of Tumors of the Cerebellopontile Angle. T. H. Weisenburg, Philadelphia.

Hemicraniosis and Cure of Brain Tumor by Operation. William G. Spiller, Philadelphia.

Brain Tumor with Jacksonian Spasm and Unilateral Laryngeal Paralysis; the Growth Localized and Removed. John L. Atlee, Lancaster, and Charles K. Mills, Philadelphia.

The Significance of Changes in the Optic Nerves in Certain Affections of the Cerebrospinal System. William Campbell Posey, Philadelphia.

THE NEW JEFFERSON MEDICAL COLLEGE
THE JEFFERSON COLLEGE LABORATORIES
THE NEW JEFFERSON MEDICAL COLLEGE HOSPITAL
THE OLD JEFFERSON COLLEGE HOSPITAL

New Jefferson Medical College buildings, Philadelphia, to be dedicated June 7 (*vide infra*).

Contribution to the Clinical Study of Arteriosclerosis. George L. Walton and W. E. Paul, Boston.

The Mental State in Aphasia. C. W. Burr, Philadelphia.

The Present Status of the Clinical Study of Aphasia. James Hendrie Lloyd, Philadelphia.

An Inquiry into the Methods and Technic of Deep Alcoholic Injection for Neuralgia. D'Orsay Hecht, Chicago.

Deep Injections of Alcohol for Trifacial Neuralgia, with Report of Cases. Hugh T. Patrick, Chicago.

Surgery of the First, Second and Third Cervical Nerves. Charles H. Frazier, Philadelphia.

Unusual Forms and Relationships of Migraine. James Jackson Putnam, Boston.

A New Clinical Type of Ascending Myelitis Due to Vertebral Involvement. G. M. Hammond, New York.

Spinal Cord Changes Following a Grave Anemia, with Disappearance of All Symptoms. J. W. McConnell, Philadelphia.

The Herpetic Inflammation of the Geniculate Ganglion, with Especial Consideration of the Aural Complications. J. Ramsay Hunt, New York.

The Psychology of Dementia Præcox. Smith Ely Jelliffe, New York.

Amentia and Dementia. Philip Coombs Knapp, Boston.

Injuries of the Spinal Cord. Alfred Reginald Allen, Philadelphia.

Syringomyelia and Syringobulbia. J. H. W. Rhein, Philadelphia.

Sensory Dissociation as a Symptom. L. Harrison Mettler, Chicago.

Nervousness; Its Significance and Treatment. John Punton, Kansas City, Mo.

Psychic Treatment of Spirit and Drug Neurotics. T. D. Crothers, Hartford, Conn.

Headache as a Symptom of Local Disorders. Frederic Coggeshall and William E. MacCoy, Boston.

The Relationship Between Referred Visceral Pain, the Sympathetic System and Various Methods of Therapy. S. D. Ludlum, Philadelphia.
Senile Trepidant Abasia. E. W. Taylor, Boston.
A Remarkable Case of Jacksonian Epilepsy with Frequent Attacks, Confined for a Year and a Half to the Muscles of the Right Eyeball. W. P. Spratling, Sonyea, N. Y.
A "Functional" Change in Myeline Sheaths. E. E. Southard F. W. Gay, Boston.

## SECTION ON HYGIENE AND SANITARY SCIENCE.

CHAIRMAN, PRINCE A. MORROW, NEW YORK CITY; SECRETARY, ELMER E. HEG, SEATTLE, WASH.

Chairman's Address: Hygiene in Relation to Heredity. Prince A. Morrow, New York.

*Symposium on the Hygiene of the Family in Relation to the Productive Energy and Health of the Offspring.*

The Influence of Gonorrhea as a Factor of Depopulation. Joseph Tabor Johnson, Washington, D. C.
Syphilis as a Cause of Depopulation and Race Deterioration. Edward L. Keyes, Jr., New York
Gonococcus Infection as a Cause of Blindness—Vulvovaginitis and Arthritis. J. Clifton Edgar, New York.
Artificial Childlessness and Race Suicide. J. Newton Hunsberger, Skippack, Pa.

*Symposium on Pure Water Supply and Sewage Purification.*

Necessity of State Control of Inland Waters. H. M. Bracken, Minneapolis.
Stream Pollution and Its Prevention. Methods of Obtaining Water. Quality and Quantity of Water from Different Sources. Variations. X. G. Goodnough, Boston.
Filtration of Water. Harry C. Clark, Boston.
Modern Methods of Sewage Purification and the Relative Applicability. George C. Whipple, New York.
Sewage Purification by Septic Tanks and Chemical Precipitation. George T. Moore, Washington, D. C.
The Relation Between Bacteria in Ice and Typhoid Fever, Based on Bacteriologic and Clinical Investigation. William H. Pak.
Symposium on Pure Milk Supply, Municipal Regulations, Etc., by Charles Harrington, Boston; Thomas Darlington, New York; John S. Fulton, Baltimore, and G. W. Goler, Rochester, N. Y.

*Symposium on Tuberculosis.*

State's Province in the Study and Prevention of Tuberculosis. J. B. Ransom, Dannemora, N. Y.
Public Provision for Advanced Cases of Tuberculosis. Edward O. Otis, Boston.
Public Provision for Incipient Tuberculosis. Sanatoria and Dispensaries. C. C. Browning, Monrovia, Cal.
Educational Propaganda for the Prevention of Tuberculosis. Livingston Farrand, New York.
The Question of Climate in the Treatment of Pulmonary Tuberculosis. Paul Paquin, Asheville, N. C.
Modern Hospital Construction. Illustrated with Lantern Slides. W. Gilman Thompson, New York.
Hospital Construction. Albert J. Ochsner, Chicago.
Smoke in Relation to Health. Abraham Jacobi, New York.
What Should be the Attitude of the Profession Toward the Hygiene of School Life? Richard C. Newton, Montclair, N. J.

## SECTION ON PHARMACOLOGY AND THERAPEUTICS.

CHAIRMAN, H. C. WOOD, JR., PHILADELPHIA; SECRETARY, C. S. N. HALLBERG, CHICAGO.

Address of the Chairman. H. C. Wood, Jr., Philadelphia.
Address of Prof. J. Remington, Philadelphia, Chairman of Delegation from American Pharmaceutical Association.
Report of the Secretary. C. S. N. Hallberg, Chicago.
Report of Committee on the U. S. Pharmacopeia. Oliver T. Osborne, New Haven, Conn., Chairman.
The U. S. Pharmacopeia. Robert Hatcher, New York.

*Symposium on Gallstones.*

Medical Treatment of Cholelithiasis. George Dock, Ann Arbor.
The Indications for Surgical Treatment of Cholelithiasis. Charles H. Frazier, Philadelphia.
The Treatment of Diabetes Mellitus. James Tyson, Philadelphia.
The Relations of Iodin to the Thyroid Gland. Reid Hunt, Washington, D. C.
Pathophysiology and Therapeutics. George F. Butler, Chicago.
A Study of the Effect of Drugs on Coagulation of the Blood. William Egbert Robertson, G. Morton Illman and Harry A. Duncan, Philadelphia.
The Effects of Hydrastis and Its Alkaloids on Blood Pressure. William Whitridge Williams, Cleveland, Ohio.
A Study of the Bromin Compounds, with Especial Reference to Strontium Bromid. William J. Robinson, New York.

*Joint Session with the Section on Practice of Medicine. Symposium on Acute Rheumatism.*

The Prophylaxis and General Management of Acute Rheumatic Fever. Solomon Solis-Cohen, Philadelphia.
Specific Treatment of Acute Articular Rheumatism or Treatment with Salicylates. N. S. Davis, Chicago.
The Connection of "M.D." with Proprietary Remedies. H. W. Wiley, Washington, D. C.
Materia Medica and Pharmacy in Hospital Practice. Martin I. Wilbert, Philadelphia.
A Plea for a More Thorough Course in Practical Pharmacy and Prescription Dispensing in Our Medical Schools. M. Clayton Thrush, Philadelphia.

## SCIENTIFIC EXHIBIT.

FRANK B. WYNN, Indianapolis, Director.

The Scientific Exhibit consists of two parts:

1. Continuous Demonstrations.

These are of gross and microscopic specimens; of apparatus, models, charts, photographs, etc., and are conducted by those personally in charge of the respective exhibits. The exhibits represent great variety and many are noteworthy in character.

2. Amphitheater Demonstrations.

These formal demonstrations will occur on Wednesday and Thursday afternoons from 2 o'clock to 5, and will be participated in by W. M. L. Coplin, Charles H. Frazier, W. S. Halsted, Ludvig Hektoen, F. Robert Zeit, W. G. MacCallum, M. P. Ravenel, Richard C. Cabot, Lawrence F. Flick, J. M. McCarthy, J. E. Greiwe, W. S. Hall and others.

## REGISTRATION.

**Suggestions and Rules for the Guidance of All Who Will Attend the Session.**

The Registration Department will be on Young's Pier. For admission to the different section meetings, exhibits and entertainments, it will be necessary for every member of the Association to register his name, and those of his guests, and to obtain the official badges provided by the Committee of Arrangements. No one will be admitted to any meeting or entertainment without a badge.

The Registration Department will be open from 8:30 a. m. to 5 p. m. on Monday, Tuesday, Wednesday and Thursday, June 3, 4, 5 and 6, and on Friday, June 7, from 9 to 10 a. m.

Members are requested to observe the following directions:

1. Each physician desiring to register will fill out a registration card.

2. Each member who has paid his annual dues in full will present his pocket card and this registration card at a window marked "Registration by Receipt."

3. The registration of members who have paid their dues, but who have lost their receipts, will require a moment or two of extra time, while the records are consulted.

4. Members who have not yet paid their dues will present registration card and make payment at a window marked "Cash."

5. Each applicant for membership will present his registration card at a window marked "New Members Make Application Here," with a certificate that he is a member in good standing in his state society. (Every such prospective member, however, will save himself delay and annoyance by sending in his application before the session. All such letters should be mailed not later than May 25, to the American Medical Association, 103 Dearborn Avenue, Chicago, as the records have to be packed and shipped to Atlantic City early.)

6. Each member on registration will receive a badge, a copy of the Official Program, and such other announcements as may be necessary.

# America's Greatest Resort.

## ATLANTIC CITY—WHERE THE ASSOCIATION HAS BEEN WELL ENTERTAINED TWICE.

W. BLAIR STEWART, A.M., M.D.
ATLANTIC CITY, N. J.

Atlantic City, the playground for the whole world and the greatest seaside health resort, has grown from a few summer cottagers in 1854 to a city of 40,000 permanent citizens. Dr. Jonathan Pitney of Absecon, N. J., a member of our own profession, recognized in the large island of sand five and one-half miles to the southeast of the New Jersey coast the unprecedented advantages for giving his patients the open-air treatment for disease. While not the first to visit Absecon Island, for that is the name of the island on which Atlantic City is located, he was practically the real promoter of the present magnificent city.

The first railroad to Atlantic City was built in 1850 and with it gradually came the summer cottager and permanent resident. It was only the matter of a few years before the beneficial qualities of the air and the peculiar geographic location of the island five and one-half miles at sea and facing the south dawned on the physicians of Philadelphia and other nearby eastern cities. The phenomenal growth of the city and the gradual recognition of its merits are now the matters of history.

With a permanent population of 40,000 we increase to 300,000 by the height of the season in August; and, what is more gratifying, this large army is properly housed, dined and entertained. The capacity of the hotels without crowding ranges from 1,100 down to the small boarding-house and cottage. With 100 large hotels, over 800 smaller hotels and boarding-houses, and about 8,000 cottages and other buildings, one can readily realize the ease with which one's comforts can be met. Atlantic City's one aim is the entertainment and comfort of her guests; she can not be classed as a manufacturing or commercial center. Our terminus is in the ocean and our only commodities in trade are fresh air, sunshine, good accommodations, wholesome food, pure water and the pleasure and health of our guests.

The ocean and beach front with its six miles of Boardwalk are the leading attractions. What more can one wish? The continuous ebbing and flowing of the tides, the never-ceasing rolling and breaking of the waves, the ever-present line of whitecapped billows, the gentle song of the sea, sometimes fine and mild and at other times rough and boisterous, all tend to make the initial visit of the stranger one grand dream. Lost to the world; lost to self; all care and trouble forgotten; silent sentimentalisms; pleasurable emotions; poetic thoughts; hours of admiration—the typical reveries of the tenderfoot's first view of the ocean. Is it any wonder that trouble is forgotten, health benefited and cares neglected?

### THE BOARDWALK.

Atlantic City's Boardwalk is unique, and nowhere in the world can you find its duplication. A steel structure with a Georgia pine deck, elevated from five to fifteen feet above the beach, six miles long and twenty to sixty feet in width. On one side is an unobstructed view of the ocean and beach while the other is lined by hotels, places of amusement and bazaars. It is on this structure that you will find a regular kaleidoscopic moving mass of humanity representing every state in the Union and every civilized nation of the earth. "Babel let loose," as one expressed it. In fact, "Meet me on the Boardwalk at Atlantic City" has become one of the world's bywords.

Five piers, each over 1,000 feet in length, extend from the Boardwalk into the sea, and on them one can find amusement, recreation, fishing or a peaceful rest at all times of the year. Open in summer and heated in winter, the music halls provide the very best high-class music. Sitting on the extreme end of the piers in an easy chair, watching the rolling waves, is the full equivalent of a real sea voyage, but lacking the roll and toss of the vessel and the too oft experienced seasickness.

At night one can imagine himself in fairyland under the myriad thousands of small electric lights overhead and all around, for the Boardwalk and many buildings are one blaze of light. This illumination alone more than repays one for the trip to this city.

### RECREATION.

Yachting and fishing are two forms of entertainment and recreation always available. Here one can have a sail on the bays and thoroughfares on smooth water or directly on the ocean, where the roll and toss of the waves are fully experienced. Atlantic City is not a port of entry and does not afford the presence of an idle, undesirable, illiterate class of rough seafaring men. The whole city and Boardwalk are so carefully policed at all times of the day and night that ladies can come and go without escort or fear of molestation.

The Country Club, located at Northfield, seven miles away, affords every opportunity for golf and other outdoor sports at all seasons and can be reached by trolley at any hour. So varied are the many sources of amusement, exercise and recreation that "dull care" never finds opportunity. Stormy and rainy days? Yes, we have a few, but a trip to Atlantic City is not complete without an opportunity to see the "demons of the deep toss the spray and waves into a fury not soon to be forgotten." Not dangerous when viewed from a hotel window or the Boardwalk, but often disastrous to the poor mariner at sea in a frail craft.

The sewage plant of Atlantic City works on the gravity system. The sixty miles of sewer pipes flow into a common station, whence the sewage is pumped through large pipes into Beach Thoroughfare, several miles back of the city, where billions of gallons of sea water ebb and flow twice daily. So complete is the dilution of the sewage by the time it reaches the ocean in front of the city that it can not be detected by the most delicate tests. Atlantic City is the only seashore resort on the Atlantic Coast that does not discharge its sewage into the ocean directly in front of the city. The plant's average pumping capacity for 1906 exceeded 8,000,000 gallons daily.

### WATER SUPPLY.

No purer water supply is given to any city than the mixed artesian and cedar water of Atlantic City. There are fifteen active artesian wells that supply 4,000,000 gallons of the purest, clear, sparkling water obtainable at any place. With new appliances being installed, it will be possible to increase the output of these wells sufficiently to supply the entire demand of Atlantic City for water from October to June. The present daily consumption during the months of October to June is 6,500,000 gallons. In August, 1906, it required 10,200,000 gallons daily to supply the city. The additional water comes from a protected cedar-grown watershed entirely free from possible contamination. The last monthly examination of the water supply made by Dr. Henry Leffman and Dr. David H. Bergey of Philadelphia showed a strictly safe and potable water, nearly chemically pure, with no suspicious bacteria of any kind. Many of the largest hotels supply their own water of purest quality from artesian wells driven to a stratum 800 to 900 feet deep. There are no fresh-water streams or ponds within six miles of Atlantic City, hence a scarcity of mosquitoes and a positive absence of malarial influences.

### CLIMATE.

The climate of Atlantic City is so pleasant, balmy and sunshiny on the average that thousands no longer seek health in the South, but spend their time here. This is more and more recognized each year by physicians, who send their convalescents by the thousands at all times of year. The Weather Bureau of the United States Department of Agriculture, located in Atlantic City, reports, during thirty-three years, an average of 61 per cent. of sunshine; 123 clear days; 137 partly cloudy days, and 105 cloudy days. The normal temperature in January is 32; February, 33; March, 39; April, 48; May, 58; June, 67; July, 72; August, 73; September, 68; October, 57; November, 46; December, 36; annual average, 52. These temperature ranges apply to the weather bureau station, but not to the Boardwalk. Here the average winter

temperature is from two to ten degrees higher, while the summer temperature is two to ten degrees cooler. This is due to the protected southerly exposure, the warmer water radiations in winter and the cooler in summer. Invalids take advantage of these facts and are able to spend at least 65 to 70 per cent. of their time on the Boardwalk. From October to March the prevailing wind is northwest; from April to September it is southwest.

The rolling-chair habit has grown to such phenomenal proportions that not only do invalids use these easy vehicles, but the average visitor can make use of them as he would of the busses and carriages. This affords every opportunity to enjoy the climatic influences and the beauties of the sea. The classes of invalids most benefited are convalescents, anemics, patients who have been operated on, neurasthenics, debilitated and diseased children, overfatigued business men and women; those with incipient tuberculosis, malaria, heart affections and catarrhal conditions (for a limited time); about 50 per cent. of rheumatic and asthmatic patients, and all who need fresh air, sunshine, exercise, relaxation and rest. Every facility is offered by the City Hospital, sanatoria and private cottages for any form of treatment within the range of modern medicine and surgery. Surf bathing, hot and cold sea-water bathing and treatments are available. It is unnecessary to advise the profession at large of the merits and demerits of climatic influences, but it is well to caution against hoping for things impossible by sending patients in the last stages of disease away from comfortable homes to die in a hotel or a boarding-house at this or any other resort.

The general health of Atlantic City's population is remarkably good, largely on account of climate, the wholesome food and water supply and an efficient health law that is strictly enforced. Typhoid fever is practically unknown except for a few cases that are imported each year. The public schools have a system of medical inspection conducted by eleven regular physicians. By this means and by the action of the board of health contagious diseases are limited to a very few cases.

### THE CITY ITSELF.

Just a word or two about the city in general: There are ten school buildings graded to the highest standard, preparing scholars for any college; thirty churches representing all denominations; a most efficient paid fire department of fourteen separate companies; an efficient corps of municipal lifeguards and medical men on the beach during surf-bathing seasons; eight banking institutions and trust companies of the highest rank—in fact, everything that goes to make an up-to-date city. There is no city in the world better able to care for conventions of all sizes and to give almost unlimited accommodation of the very best kind without crowding and overcharging. An influx of 10,000 to 20,000 people is no longer a novelty, and they are so well cared for and with such little effort that their presence is scarcely noticed except on the Boardwalk.

Our hotels range from the palatial beach front structures of steel and concrete to the more unobtrusive little boarding-houses on the side streets. Money has not been spared in providing for the comforts of their guests. One can find every home comfort at command winter and summer. The rates charged by these hotels are within the reach of all and are proportionately low when compared with other cities. Many of them supply hot and cold fresh and sea-water baths with each suite of rooms. Special diet kitchens for the preparation of food for invalids and the sick are noticeable features of the best hotels. For the benefit of those who expect to attend the coming convention of the American Medical Association in Atlantic City a list of approved hotels is appended. In engaging rooms it is best to communicate directly with the hotel desired for reservations. There will be no crowding of guests because of lack of room, as ample provision has been made for every one who comes. Below is given a list of the leading Atlantic City hotels, with the location, capacity and rates, a list of headquarters and a list of section meeting places.

The general headquarters for registration, information and exhibits will be located on Young's Pier, Tennessee Avenue and the Boardwalk, where every one is requested to register immediately on arrival in Atlantic City. The Bureau of Information on this pier will give all data respecting hotels, meeting places and other points desired.

### EXCELLENT RAILROAD SERVICE.

Probably no other city of its size has a better railroad service than Atlantic City. The Pennsylvania, the Reading, the Jersey Central and the electric lines all maintain the finest equipment of their systems on their Atlantic City branches. The tracks are all stone ballasted and protected by the automatic signal system. The fastest express trains run at very frequent intervals. It is a noticeable fact that out of the thirteen fastest trains maintained in the world, nine are scheduled on the Atlantic City systems. Speed, safety, comfort and luxury are the watchwords of the railroads. Special cars and trains will be made up and run through to Atlantic City without change for the coming session in June. The passenger associations have granted an excursion rate of one first-class fare plus $1. The present return limit is June 10. The Transportation Committee is endeavoring to have a further extension, and if it is obtained due notice will be given in THE JOURNAL. Special attention is also called to the Souvenir Booklet, to be mailed by the regular medical profession of Atlantic City about May 1, to every member of the American Medical Association. This, with the circular from the local Committee of Arrangements, will supply additional data and take the place of the usual Souvenir Booklet given out at the time of the session.

The local Committee of Arrangements has made every preparation for an exceptionally large meeting and extends a hearty welcome to every member of the American Medical Association who can possibly attend the Atlantic City session. Entertainment has been provided for the visiting ladies and guests and members of the Association. These functions will be announced at the time of registration. Additional information will be gladly given by the members of the local committee, the personnel of which follows:

### COMMITTEE ON ARRANGEMENTS.

W. Blair Stewart, Chairman, North Carolina and Pacific Avenues.

Edward Guion, Secretary. J. Addison Joy, Treasurer.

### COMMITTEE ON FINANCE.

Eugene L. Reed, Chairman.

W. Edgar Darnall, J. Addison Joy, Philip Marvel, W. M. Pollard, Walter Reynolds.

### COMMITTEE ON HALLS AND MEETING PLACES.

Walt Ponder Conaway, Chairman.

E. S. Sharpe, M. L. Somers, I. E. Leonard.

### COMMITTEE ON COMMERCIAL EXHIBIT.

Edward Guion, Chairman.

H. Stokes Doriss. Thomas S. Githens.

*(All correspondence concerning the reservation of space for exhibits should be addressed to the American Medical Association, 103 Dearborn Avenue, Chicago.)*

### COMMITTEE ON ENTERTAINMENT.

Emery Marvel, Chairman.

Andrew L. Atherton, Clara K. Bartlett, David Berner, Walt P. Conaway, Elisha C. Chew, W. Price Davis, L. Webster Fox, Charles H. Frazier, E. L. B. Godfrey, Edward Guion, Edwin H. Harvey, W. Atlee Hickman, Milton S. Ireland, William E. Jonah, J. Addison Joy, Bernard R. Lee, Alexander Marcy, Joseph C. Marshall, Philip Marvel, Paul M. Mecray, Victor M. Metzler, James C. T. MeVay, Ely E. Parker, Ross V. Patterson, William M. Pollard, Edward J. Porteous, Eugene L. Reed, Thomas K. Reed, George Scott, James W. Snowball, Jesse B. Thompson, R. Woolbert.

CITIZEN'S COMMITTEE ON ENTERTAINMENT.

Col. Savery Bradley, Harry Bacharach, Elwood Bartlett, Albert T. Bell, Walter Buzby, William S. Cochran, Harry B. Cook, Harry H. Deakyne, W. B. Dill, Hon. Allen B. Endicott, Charles Evans, Walter E. Edge, Brinkle Gummy, Newlin Haines, Louis Kuhnle, J. Haines Lippincott, Harry Leeds, Daniel Myers, Jacob Myers, Col. Thomas Potter, Frederick Robbins, Hon. Franklin P. Stoy, Ernest Shackelford, Charles D. White, John J. White, Harry Wallace.

COMMITTEE ON PROGRAM, PRINTING, ETC.

George Scott, Chairman.

Clara K. Bartlett, Clarence Garrabrant, Emery Marvel.

COMMITTEE ON HOTELS.

William E. Jonah, Chairman.

J. C. T. MeVay, W. Price Davis.

COMMITTEE ON BUREAU OF INFORMATION.

Milton S. Ireland, Chairman.

A. E. Ewens, Nevin B. Werst. W. F. Ridgway.

COMMITTEE ON BADGES.

Clara K. Bartlett, Chairman.

Mary E. Townsend, E. J. Porteous, Eugene L. Reed, W. A. Hickman, J. F. DeSilver, A. L. Atherton.

COMMITTEE ON ALUMNI AND SECTION ENTERTAINMENTS.

James W. Snowball, Chairman.

A. B. Shimer, J. C. Marshall, David Berner, Joseph F. DeSilver, Victor W. Metzler, Thomas G. Dunlap.

COMMITTEE ON SCIENTIFIC EXHIBIT.

Edward J. Porteous, Chairman.

Samuel Barbash, W. C. Wescott.

COMMITTEE ON REGISTRATION.

Edward J. Porteous, Chairman.

Samuel Barbash, W. C. Wescott.

COMMITTEE ON LADIES' ENTERTAINMENT.

Mrs. A. D. Cuskaden, Chairman.

Mrs. W. Blair Stewart, Mrs. W. E. Darnall, Mrs. M. L. Somers, Mrs. James North, Mrs. T. G. Dunlap, Mrs. W. H. Walling, Mrs. W. M. Pollard, Mrs. George Scott, Mrs. J. A. Joy, Mrs. J. C. T. MeVay, Mrs. Edward Guion, Mrs. W. A. Hickman, Mrs. Philip Marvel, Mrs. E. J. Portεous, Mrs. T. K. Reed, Mrs Emery Marvel, Mrs. H. Stokes Doriss, Mrs. M. L. Ireland, Mrs. C. Garrabrant, Mrs. A. L. Atherton, Mrs. E. H. Harvey, Mrs. W. Price Davis, Mrs. Joseph DeSilver, Dr. Clara K. Bartlett, Dr. Mary E. Townsend, Mrs. Reiley, Mrs. Edwin Sharpe, Mrs. C. E. Filbert, Mrs. I. E. Leonard.

## MEETING PLACES.

### Convenient and Commodious Places for the Various Sections and General Meeting.

The following is a list of the various meeting places arranged by the Atlantic City Committee for the various General Meetings and for the several sections:

OPENING SESSION (Tuesday at 10:30 a. m.)..... Auditorium, Young's New Pier
EVENING SESSIONS (Orations).....Casino Hall, Steel Pier
HOUSE OF DELEGATES ....Tower Observation Hall, Hotel Traymore
TRUSTEES' ROOM.....Marlborough House
PRACTICE OF MEDICINE.....Casino Hall, Steel Pier
SURGERY AND ANATOMY.....Music Hall, Steel Pier
OBSTETRICS AND DISEASES OF WOMEN.....Dance Hall, Steel Pier
DISEASES OF CHILDREN.....Ocean Parlor, Hotel Traymore
LARYNGOLOGY AND OTOLOGY..... Baptist Church, Pacific and Pennsylvania Aves.
OPHTHALMOLOGY ..... First Presbyterian Church, Pacific and Pennsylvania Aves.
NERVOUS AND MENTAL DISEASES.....Brighton Casino
HYGIENE AND SANITARY SCIENCE.....Sun Parlor, Steel Pier
CUTANEOUS MEDICINE AND SURGERY..... Park Avenue Hall, Hotel Marlborough
PATHOLOGY AND PHYSIOLOGY..Dennis Sun Parlor, Dennis Hotel and Scientific Exhibit Hall for special meetings on Young's Pier.
PHARMACOLOGY AND THERAPEUTICS.....Ocean Hall, Marlborough
STOMATOLOGY.....Casino Hall, Committee Room No. 1, Steel Pier
REGISTRATION AND BRANCHES BUREAU OF INFORMATION.... Main Entrance, Young's Old Pier
POSTOFFICE, TELEGRAPH, TELEPHONE AND BUREAU OF INFORMATION Marine Hall, Young's Old Pier
COMMERCIAL AND SCIENTIFIC EXHIBITS..... Marine Hall, Young's Old Pier
PRESIDENT'S RECEPTION .....Music Hall, Steel Pier
LADIES' AFTERNOON TEA.....Hotel Marlborough-Blenheim

## ATLANTIC CITY HOTELS.

### Ample Accommodations for All will be Found Easily in This City of Hotels.

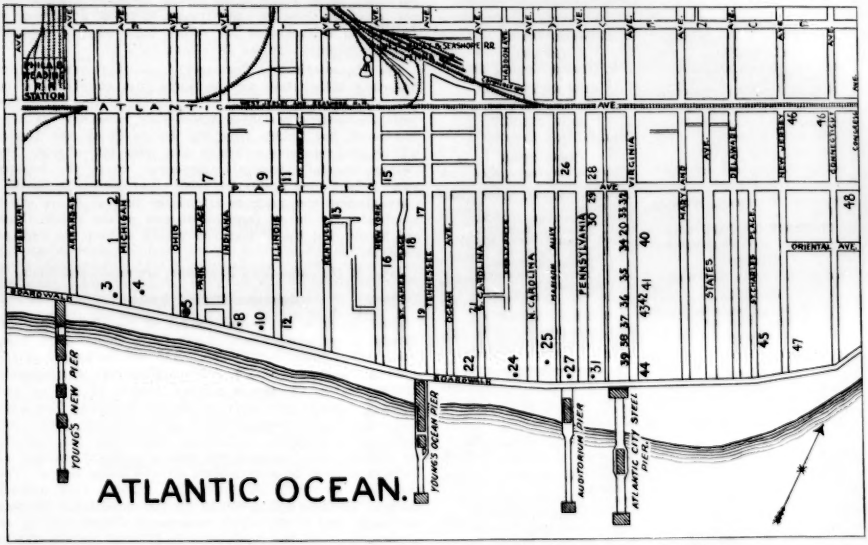
HEADQUARTERS.

OFFICERS AND GENERAL HEADQUARTERS.....Marlborough-Blenheim
PRACTICE OF MEDICINE.....Hotel Dennis
SURGERY AND ANATOMY .....Hotel Chalfonte
OBSTETRICS AND DISEASES OF WOMEN.....Haddon Hall
DISEASES OF CHILDREN .....Hotel Traymore
OPHTHALMOLOGY .....Hotel Seaside
LARYNGOLOGY AND OTOLOGY .....Hotel Strand
NERVOUS AND MENTAL DISEASES.....Hotel Brighton
HYGIENE AND SANITARY SCIENCE .....Hotel St. Charles
CUTANEOUS MEDICINE AND SURGERY .....Marlborough-Blenheim
PATHOLOGY AND PHYSIOLOGY.....Hotel Shelburne
PHARMACOLOGY AND THERAPEUTICS .....Marlborough-Blenheim
STOMATOLOGY .....Hotel Traymore

The following alphabetical list of the leading hotels of Atlantic City gives the address of each, the capacity, the plan whether European, American or both—and the rates per day for one person. The numbers in parentheses following the names refer to the location on the map. The hotels given in capital letters are those which have been selected as headquarters for the various sections, etc.:

ABBEY (11), Pacific and Mt. Vernon Aves.; 350; American and European; $1.50 to $2.50.
ACME (13), 123 So. Kentucky Ave.; 40; American; $1.50 to $2.50.
ALBEMARLE (32), Virginia Ave., near Beach; 350; American; $2 to $5.
ALBION, Atlantic and Massachusetts Aves.; 150; European; $1 to $2.
ALGONQUIN, South Carolina Ave., near Beach; 100; American; $1.50 to $2.
ARCHDALE, St. James Place, near Beach; 150; American; $2 to $2.50.
ARDMORE (37), Virginia Ave., near Beach; 125; American; $2 up.
ATGLEN, 20 So. Michigan Ave.; 150; American; $1.50 to $2.
BATES' INLET HOTEL, Inlet and Boardwalk; 35; European; $1 to $1.50.
BEAUMONT (18), 136 So. Tennessee Ave.; 200; American; $1.50 to $2.50.
BERKSHIRE INN (43), Virginia Ave., near Beach; 300; American; $2 to $5.
BEYER'S, Maryland and Arctic Aves.; 20; American and European; Amer., $1.50 to $2.
BINGHAM (15), Pacific and New York Aves.; 100; American and European; $1.50 to $2.50.
BOTHWELL (39), Virginia Ave., near Beach; 250; American; $2.50 to $5.
BRIGHTON (8), headquarters Nervous and Mental Diseases; Indiana Ave. and Boardwalk; 300; American; rates on application.
CEDARCROFT (22), South Carolina Ave., near Beach; 250; American; $2 up.
CHALFONTE (24), headquarters Surgery and Anatomy; North Carolina Ave. and Boardwalk; 600; American; $4 up.
CHELSEA, Morris and Brighton Aves. and Boardwalk; 500; American; $4 to $10.
CHELTENHAM, Virginia Ave.; rates on application.
CLABBY, Tennessee and Atlantic Aves.; 50; men only $1 to $3.
CLARENDON (33), Virginia Ave., near Beach; 300; American; $2, $2.50 and $3.
COLWYN, 21 So. Michigan Ave.; 150; American; $1.50 up.
CONTINENTAL, Tennessee Ave., between Atlantic and Pacific Aves.; 500; American and European; $1.50 to $2.50.
DAVENPORT, South Carolina Ave., near Beach; 200; American; $1.50 to $2.50.
DENNIS (4), headquarters Practice of Medicine; Michigan Ave. and Boardwalk; 600; American; $3.50 to $6.
EARL-MAR HALL, Vermont Ave. and Beach; 300; American; $2 to $5.
EASTBOURNE (7), Pacific Ave., opposite Park Place; 50; American; $2.50 to $4.
EBBITT HOUSE, 127 St. James Place; 100; American; $2 to $2.50.
EDISON (2), Michigan and Pacific Aves.; 250; American and European; Amer., $1.50 up; Europ., $1 up.
ELBERON, Pacific and Tennessee Aves.; 300; American; $1.50 to $2.50.
ELWOOD, St. James' Place, near Beach; 150; American; $1.50 to $3.50.
FREDONIA (19), Tennessee Ave., near Beach; 250; American and European; Amer., $2 to $2.50; Europ., $1 to $2.
GALEN HALL (48), Connecticut and Pacific Aves.; 350; American; rates on application.

GARDEN (9), Illinois and Pacific Aves.; 300; American and European; Amer., $3 to $6; Europ., $2 up.
GARMAN, Atlantic and New Jersey Aves.; 50; American; $2.
GLADSTONE, Brighton Ave. and Beach; 150; American; $3 to $6.
GRAND ATLANTIC (41), Virginia Ave., near Beach; 500; American; $2.50.
GREATER PITTSBURGH, 142 So. Tennessee Ave.; 100; American; $1.50 up.
HADDON HALL (25), headquarters Obstetrics and Diseases of Women; North Carolina Ave. and Boardwalk; 450; American; rates on application.
HYGEIA, New York and Pacific Aves.; 200; American; $2 up.
IROQUOIS (21), South Carolina Ave., near Beach; 400; American and European; Amer., $2.50 to $4.
ISLESWORTH (44), Virginia Ave. and Boardwalk; 500; American; $2.50 to $3.50.
KENTUCKY, Kentucky Ave., near Beach; 200; American and European; $2 to $2.50.
LARSEN, 2117 Pacific Ave.; 165; American; $1 up.
LORAINE, St. Charles Place, near Beach; 200; American; $3 to $5.
MALATESTA, Atlantic and North Carolina Aves.; 200; American and European; Amer., $2 to $2.50.
MARLBOROUGH-BLENHEIM (5), general headquarters; also Cutaneous and Pharmacology; Ohio Ave., Park Place and Boardwalk; 1,100; American and European; Amer., $4 to $10; Europ., $2 to $8.
MASON'S, S So. Maryland Ave.; 20; European; $1 up.
MILLER COTTAGE AND ANNEX, 9 No. Georgia Ave.; 250; American; $1 to $1.25.
MONTICELLO, Kentucky Ave., near Beach; 300; American; $2 to $3.50.
READE, 613 Pacific Ave., above New Jersey Ave.; 150; American and European; Amer., $2 to $2.50; Europ., $1 to $1.50.
ROANOKE, 23 So. New York Ave.; 150; American; $2 up.
RUDOLF (47), New Jersey Ave. and Boardwalk; American; $2.50 to $5.
ST. CHARLES (45), headquarters Hygiene and Sanitary Science; St. Charles Place and Boardwalk; 300; American; $3 to $7.
ST. CLARE, Pennsylvania Ave., near Beach; 135; American; $2 to $3.
ST. ELMO, 120 So. Tennessee Ave.; 100; American; $1.25 to $2.
ST. JAMES, St. James Place, near Beach; 65; American; $2 to $3.
SCARBOROUGH, Beach front at Maryland Ave.; American; $2.50.
SEASIDE HOUSE (31), headquarters Ophthalmology; Pennsylvania Ave. and Beach; 275; American, $3.50 to $10.
SHELBURNE (3), headquarters Pathology and Physiology; Michigan Ave. and Boardwalk; 300; European; $1.50 up.
SOTHERN (36), Virginia Ave., near Beach; 200; American; $2 to $3.
STRAND (27), headquarters Laryngology and Otology; Pennsylvania Ave. and Boardwalk; 300; American; $3.50 to $6.
STRATH-HAVEN, Kentucky Ave., near Beach; 125; American; $1.50 to $2.50.
TRACY (17), 112 So. Tennessee Ave.; 75; American and European; Amer., $1.50 to $3; Europ., $1 up.
TRAYMORE (10), headquarters Pediatrics and Stomatology; Illinois Ave. and Boardwalk; 600; American; $4 up.
VERMONT, Vermont Ave., near Beach; 150; American; $1 to $3.
VICTORIA (20), 117 So. Virginia Ave.; 30; American; $1.50 to $2.
WARWICK, South Carolina Ave. and Beach; 100; American; $2.50 to $3.50.
WENZ HOTEL AND RESTAURANT, Atlantic and New York Aves.; 60; American and European; Amer., $1.50 up; Europ., $1 up.




1. Pennhurst.
2. Edison.
3. SHELBOURNE.
4. DENNIS.
5. MARLBOROUGH-BLENHEIM.
6. High School.
7. Eastbourne.
8. BRIGHTON.
9. Garden.
10. TRAYMORE.
11. Abbey.
12. Windsor.
13. Acme.
14. Postoffice.
15. Bingham.
16. New Holland.
17. Tracy.
18. Beaumont.
19. Fredonia.
20. Victoria.
21. Iroquois.
22. Cedarcroft.
24. CHALFONTE.
25. HADDON HALL.
26. BAPTIST CHURCH.
27. STRAND.
28. PRESBYTERIAN CHURCH.
29. Postoffice.
30. New Chatham.
31. SEASIDE HOUSE.
32. Albemarle.
33. Clarendon.
34. New Belmont.
35. Raymond.
36. Sothern.
37. Ardmore.
38. Wiltshire.
39. Bothwell.
40. Cheltenham.
41. Grand Atlantic.
42. Ponce de Leon.
43. Berkshire Inn.
44. Islesworth.
45. St. CHARLES.
46. Phillips.
47. Rudolf.
48. New Galen Hall.

NEW BELMONT (34), Virginia Ave., near Beach; 300; American and European; Amer., $2.50 up; Europ., $1 up.
NEW CHATHAM (30), 111 So. Pennsylvania Ave.; 65; American; $2.50 to $4.
NEW HOLLAND (16), New York Ave.; $1.50 up.
NEW ROMAN, St. Charles Place, near Beach; 150; American; $3.
OLD HOMESTEAD, 27 So. Kentucky Ave.; 125; American; $1.25 to $2.
PENNHURST (1), Michigan Ave., near Beach; 160; American; $2.50 to $3.50.
PENNLYN COTTAGE, 108 So. Ohio Ave.; 50; American; $1.25 to $2.
PHILLIPS (46), 14 So. Connecticut Ave.; 100; American; $2 to $2.50.
PONCE DE LEON, Virginia Ave., near Beach; American; $2 up.
RALEIGH, St. Charles Place, near Beach; 400; American; $2.50 to $4.
RAYMOND (35), Virginia Ave., near Beach; 150; American; $2 to $3.
WILTSHIRE (38), Virginia Ave., near Beach; 250; American and European; Amer., $2.50 to $5; Europ., $1.50 to $4.
WINDSOR (12), Illinois Ave. and Boardwalk; American; $3 to $6.

## GENERAL MEETINGS.

### The Formal Opening Tuesday Morning—The Orations at the Evening Meetings.

The opening of the fifty-eighth annual session will be the General Meeting, held Tuesday morning at 10:30 o'clock in the Auditorium on Young's New Pier. Addresses of welcome will be made by Dr. Alexander Marcy, president of the New Jer-

sey State Medical Society; Hon. Edward C. Stokes, governor of New Jersey, and Hon. F. P. Stoey, mayor of Atlantic City. The President-elect, Dr. Joseph D. Bryant, New York City, will be installed and will make an address.

The evening General Meetings will be held at 7:30 p. m. in the Casino Hall on the Steel Pier.

On Tuesday evening the Oration on Medicine will be delivered by Dr. James B. Herrick, Chicago, and the Oration on Surgery by Dr. William H. Wathen, Louisville, Ky.

On Wednesday evening Dr. Samuel G. Dixon, Philadelphia, will deliver the Oration on State Medicine.

## HOUSE OF DELEGATES.

### Membership of the Legislative Body of the American Medical Association, 1907.

As a number of the state associations have not yet held their meetings for 1907, it is impossible to give, at this time, a complete list of the members of the House of Delegates for the Atlantic City session. The following is a list of the hold-over delegates and of the newly elected members who have been reported up to the time of going to press.

ARKANSAS.
E. K. Williams, Arkadelphia.

CALIFORNIA.
Oliver D. Hamlin, Oakland.
H. Bert Ellis, Los Angeles.
Phillip M. Jones, San Francisco.

COLORADO.
Hubert Work, Pueblo.
J. N. Hall, Denver.

CONNECTICUT.
George R. Shepherd, Hartford.

DELAWARE.
Peter W. Tomlinson, Wilmington.

DISTRICT OF COLUMBIA.
George N. Acker, Washington.

FLORIDA.
Joseph N. Porter, Key West.

GEORGIA.
T. D. Coleman, Augusta.
T. P. Waring, Savannah.

IDAHO.
R. L. Nourse, Boise.

ILLINOIS.
George W. Webster, Chicago.
J. L. Wiggins, East St. Louis.
O. B. Will, Peoria.
Charles L. Mix, Chicago.

IOWA.
E. E. Dorr, Des Moines.
Wm. Jepson, Sioux City.

KANSAS.
C. E. Bowers, Wichita.

KENTUCKY.
J. Garland Sherrill, Louisville.
J. N. McCormack, Bowling Green.
W. W. Richmond, Clinton.

MAINE.
E. M. Fuller, Bath.

MARYLAND.
G. L. Taneyhill, Baltimore.

MASSACHUSETTS.
Walter P. Bowers, Clinton.
Frank G. Wheatley, North Abington.
Edward H. Bradford, Boston.
C. H. Cook, Natick.
R. C. Cabot, Boston.

MICHIGAN.
A. I. Lawbaugh, Calumet.
Leartus Connor, Detroit.

MINNESOTA.
John T. Rogers, St. Paul.
A. E. Spalding, Luverne.

MISSISSIPPI.
John Darrington, Yazoo City.
W. W. Crawford, Hattiesburg.

MONTANA.
Donald Campbell, Butte.

NEBRASKA.
R. C. Moore, Omaha.

NEVADA.
J. E. Pickard, Virginia City.

NEW HAMPSHIRE.
John M. Gile, Hanover.

NEW JERSEY.
Chas. L. Kipp, Newark.

NEW YORK.
Wisner R. Townsend, New York City.
Abraham Jacobi, New York City.
J. W. Grosvenor, Buffalo.
D. C. Morlarta, Saratoga.
Albert Vander Veer, Albany.
W. S. Ely, Rochester.
H. L. Elsner, Syracuse.
A. T. Bristow, Brooklyn.
R. Park, Buffalo.
H. D. Wey, Elmira.

NORTH CAROLINA.
W. J. Lumsden, Elizabeth City.
J. W. Long, Greensboro.
Martin L. Stevens, Asheville.

PENNSYLVANIA.
Fremont W. Frankhauser, Reading.
Adolph Koenig, Pittsburg.
William T. Williams, Mt. Carmel.
Samuel Wolfe, Philadelphia.
Alexander R. Craig, Philadelphia.
George W. Guthrie, Wilkes-Barre.
Edward B. Heckel, Pittsburg.
Walter Lathrop, Hazleton.

OHIO.
Frank D. Bain, Kenton.
A. B. Walker, Canton.

OREGON.
H. W. Cole, Portland.

PHILIPPINE ISLANDS.
J. R. McDill, Manila.

RHODE ISLAND.
John Champlin, Westerly.

TENNESSEE.
T. J. Happel, Trenton.

TEXAS.
J. T. Wilson, Sherman.
C. E. Cantrell, Greenville.
A. C. Scott, Temple.
S. T. Turner, El Paso.
Frank Paschal, San Antonio.

UTAH.
Philo E. Jones, Salt Lake City.

VERMONT.
J. Henry Jackson, Barre.

WASHINGTON.
N. Fred Essig, Spokane.

VIRGINIA.
Wm. E. Anderson, Farmville.

WISCONSIN.
W. H. Washburn, Milwaukee.
W. T. Sarles, Sparta.
B. M. Caples, Waukesha.

### SECTIONS.

HYGIENE AND SANITARY SCIENCE.
Denslow Lewis, Chicago.

SURGERY AND ANATOMY.
F. B. Lund, Boston.

OPHTHALMOLOGY.
Samuel D. Risley, Philadelphia.

STOMATOLOGY.
G. V. L. Brown, Milwaukee.

OBSTETRICS AND DISEASES OF WOMEN.
W. B. Dorsett, St. Louis.

NERVOUS AND MENTAL DISEASES.
D'Orsay Hecht, Chicago.

## TRANSPORTATION.

### One Fare for the Round Trip—Special Trains and Special Parties.

The New England Passenger Association, the Trunk Line Association and the Central Passenger Association have granted a rate for the round trip of one first-class limited fare plus $1. Tickets will be sold and good going May 31 to June 4, inclusive; returning, leaving Atlantic City June 4 to 10, inclusive. By deposit of the ticket by the original purchaser, in person, with the special agent at Atlantic City not later than June 10, and payment of fee of $1 at time of deposit, an extension of the return limit may be obtained to leave Atlantic City not later than June 18.

The Transcontinental Passenger Association granted a one first-class 30-day fare for the round trip, tickets to be on sale May 20 and 21. Final arrangements of this association with the eastern passenger associations have not yet been announced, but tickets from the Pacific Coast and Mexico will be good returning within 90 days from date of sale. The Transcontinental Passenger Association covers the western part of the United States, including all of the Pacific Coast.

An attempt was made to extend the time of return which is effective on tickets from points east of the Pacific Coast and Mexico, but the several lines wished to keep the limit at June 18.

Rates to the Jamestown Exposition are mentioned below.

### American Medical Special.

The Committee on Transportation of the Chicago Medical Society is perfecting arrangements for a special train from Chicago to Atlantic City. This train will be known as the American Medical Special, and will run over the Pennsylvania System, leaving Chicago on Sunday, June 2, at 3 p. m., and reaching Atlantic City early on Monday morning. The train will be a special electric-lighted, solid vestibule train, consisting of two diners, a Pullman observation car, composite smoking car, baggage car and a sufficient number of Pullman sleepers to accommodate all who desire berths. The train will be run from Chicago to Atlantic City without change. The fare will be $21.50 for the round trip. Sleeping car berth will be $5. Rules concerning tickets will be as above stated. Stopover privileges in Philadelphia and Washington may be had within the limits of the ticket. Those desiring to return via Washington must secure tickets reading that way. All reservations for accommodations on this train will be made in Chicago at the office of the city ticket agent of the Pennsylvania System, No. 248 Clark Street. Berths may be reserved by letter or telegraph. It is anticipated that a large number of physicians from Chicago and points West will engage passage on this train.

### An Ohio Special.

The physicians of Akron, Ohio, have issued an invitation, through the Summit County Medical Society, to all members of the profession of the Sixth Councilor District to attend the Atlantic City Session in a body. Special Pullmans will start from Akron and Canton on Monday evening, June 3, and will be transferred at North Philadelphia directly to the Atlantic City train. Hotel headquarters have been selected in Atlantic City, and special features are being arranged for the comfort of members of the party. A circular giving the details of the trip has been sent to all members of the profession in the district.

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### Baltimore and Ohio Route.

The Baltimore & Ohio Railroad has made a special rate of $21.25 round trip from Chicago to Atlantic City, with stopover privileges at Washington, Baltimore and Philadelphia. The fare for a side trip from Philadelphia to New York and return is $4. The fare from Baltimore or Washington to Norfolk, Va., and return is $3 on the day boat and $5 on the night boat. Tickets are good as outlined above. Sleeping car accommodations as well as any further information can be obtained from W. W. Picking, District Passenger Agent, Baltimore & Ohio Railroad, 244 Clark Street, Chicago.

### Missouri Valley Special.

Arrangements are being made for a special train from St. Louis to Atlantic City, to be known as the Missouri Valley Special. This train will be composed of Pullman sleepers, diners and observation cars, and will leave St. Louis on Saturday, June 1, at noon, running over the Big Four and Chesapeake & Ohio Railways, via Indianapolis, Cincinnati and the picturesque resort region of the Virginias. The train will stop over Sunday at Hot Springs, Va. It will arrive at Atlantic City on Monday morning. The return trip will be via New York City, Jamestown Exposition, Richmond and White Sulphur Springs. A cordial invitation is extended to all physicians of the territory covered by this route to join this party with their families and friends, whether members of the organization or not. Secretaries of district and county societies in the west and northwest are invited to make up parties. Special cars will leave Omaha (via Wabash Railroad), Kansas City and St. Joe (via Missouri Pacific Railroad) on the evening of Friday, May 31, arriving in St. Louis early in the morning of June 1, and allowing four hours in that city before the leaving time of the special. All requests for further information or for hotel and sleeping car reservations should be addressed to Dr. Charles Wood Fassett, St. Joseph, Mo.

### Special from Detroit.

A special train will leave Detroit over the Michigan Central on Monday evening, June 3, provided one hundred reservations are made, otherwise special Pullmans will be attached to the regular afternoon train. Further announcement regarding arrangements for Michigan physicians will be made later.

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## STOPOVERS AND SIDE TRIPS.

### Clinics in Philadelphia—The Jamestown Exposition.

Railroad tickets which read via Philadelphia, Washington or Baltimore, allow stopover at these places provided the ticket is deposited with the ticket agent at such place immediately on arrival. The ticket must be called for and the journey taken up again before date of expiration.

### The Jamestown Exposition.

Many will take advantage of the above privilege to make a side trip to the Jamestown Exposition. This exposition will, in a way, be unique in the history of such celebrations. It will have as a part of its attractions the most remarkable marine review ever seen in American waters. In keeping with the event which it commemorates, there will be shown side by side the arts and industries as practiced in 1607 and 1907.

It is to be remembered that favorable railroad rates are in effect this summer direct to the exposition. Some may prefer to buy their tickets to Jamestown, with stopover at Washington, Baltimore or Philadelphia, and make a side trip to Atlantic City at the time of the session.

### The New Jefferson Medical College Hospital.

In connection with the meeting of the American Medical Association in Atlantic City, June 4 to 7, 1907, the medical profession in Philadelphia purposes providing a number of entertainments for the members of the Association who will necessarily have to pass through that city on their way to the seashore. Among these entertainments will be those connected with the opening of the new Jefferson Medical College Hospital, which has just been completed at a cost of $1,500,000. (See illustration on page 1516.)

On Saturday, June 1, the alumni dinner of the Jefferson College will be held, and to this all Jefferson graduates are cordially invited. On Monday, June 3, the commencement exercises of the Jefferson College will take place at the American Academy of Music, and in addition to the degrees conferred on members of the graduating class, a number of honorary degrees will be conferred on distinguished physicians. To these exercises, which are held at noon, all members of the American Medical Association are also cordially invited.

On Friday, June 7, at 3 o'clock, the exercises in connnection with the opening of the new hospital will take place, this date being chosen in order that members of the Association may have an opportunity on their way back from Atlantic City to inspect the new building. At these exercises addresses will be delivered by the Honorable William Potter, ex-minister to Italy, representing the board of trustees; by Dr. William H. Welch, of Johns Hopkins University, Baltimore, representing the science of medicine, and by Dr. J. Chalmers Da Costa, representing the faculty and the alumni. After the addresses the building will be thrown open for inspection and a collation will be served. Members of the Association are cordially invited to attend all of these functions and a formal invitation will be sent them if the chairman of the committee of arrangements, Dr. H. A. Hare, 1801 Spruce Street, is notified.

The new hospital is equipped not only with all the modern appliances for taking care of the sick in every department of medicine and surgery, but has also been constructed with the dominant idea that it is a teaching hospital, and every facility is, therefore, provided for the adequate instruction of students.

### University of Pennsylvania Clinics.

The University of Pennsylvania will give clinics for visiting physicians who happen to be in Philadelphia on their way to and from the session. The schedule is as follows:

MONDAY, JUNE 3.

Some Principles of Dietetics, by David L. Edsall, at 9 a. m., in the University Hospital.
Exhibition of Gynecologic specimens, by Dr. C. Norris, from 10 to 12, in the Gynecologic Laboratories.
The Diagnosis and Treatment of Arteriosclerosis, by Dr. Alfred Stengel, 12 m., in the University Hospital.
An Obstetric Clinic, by Dr. B. C. Hirst, from 12 to 3, in the University Hospital.
Surgery of Trifacial Neuralgia, by Dr. Charles H. Frazier, at 2 p. m., in the University Hospital.
Demonstrations of the Workings of the Department of Physical Education, by Dr. R. Tait McKenzie, from 2 to 5 p. m., in the Gymnasium.
Gynecologic Clinic, by Dr. John G. Clark, from 3 to 5 p. m., in the University Hospital.
Practical Demonstrations in Blood Examinations, by Dr. William Pepper, from 3 to 5 p. m., in the Medical Laboratories.
Demonstrations of the Treatment of Disease by Bacterial Vaccines (Wright's Opsonic Theory), by Dr. N. Gildersleeve, from 4 to 5 p. m., in the Laboratory of Hygiene.
Operative Treatment of Suppurating Ears, by Dr. B. Alexander Randall, at 5 p. m., in the University Hospital.

FRIDAY AFTERNOON, JUNE 7.

Surgical Clinic on Renal and Vesical Cases, by Dr. Edward Martin, at 2 p. m., in the University Hospital.
Correction of Deviations of the Nasal Sentum and Paraffin Prothesis of Deformities of the External Nose, by Dr. Charles P. Grayson, at 2 p. m., in the University Hospital.
Principles of Modern Arterial Suture (Arterial Anastomosis and Direct Transfusion), by Dr. J. Edwin Sweet, from 2 to 5 p. m., in the Medical Laboratories.
Clinical Lecture on Neurology, by Dr. Wm. G. Spiller, at 3 p. m., in the University Hospital.
Clinic with Special Reference to Eye Injuries and the Prevention of Infections, by Dr. G. E. de Schweinitz, at 3 p. m., in the University Hospital.
Surgical Phases of Splanchnoptosis, by Dr. John G. Clark, from 3 to 5 p. m., in the University Hospital.
Intermittent Claudication and Endarteritic Gangrene, by Dr. David Riesman, at 5 p. m., in the University Hospital.

SATURDAY, JUNE 8.

Medical Clinic, by Dr. James Tyson, at 9 a. m., in the University Hospital.
Demonstrations of Skiagraphy and Skiagraphs, by Dr. Howard Pancoast, from 10 a. m. to 12 m., in the X-ray Laboratory of the University Hospital.
Diagnosis and Treatment of Arteriosclerosis, by Dr. Alfred Stengel, at 12 m., in the University Hospital.
Mechanism and Significance of the Initial Chill, by Dr. Allen J. Smith, at 1 p. m., in the University Hospital.
Surgical Clinic on Intracranial Lesions, by Dr. Charles H. Frazier, at 2 p. m., in the University Hospital.
Medical Clinic on Gastro-Intestinal and Hepatic Disease, by Dr. John H. Musser, at 3 p. m., in the University Hospital.
Adaptation of Subcuticular Sutures to Plastic Operations, by Dr. R. M. Anspach, from 3 to 5 p. m., in the University Hospital.
Aphasia and Cerebral Centers of Speech, by Dr. Charles K. Mills, at 4 p. m., in the University Hospital.
Demonstrations in Ophthalmic Pathology, by Drs. G. E. de Schweinitz, C. M. Hosmer, and T. B. Holloway, at 4 p. m., in the Medical Laboratories.

Polycythemia, by Dr. Joseph Sailer, at 5 p. m., in the University Hospital.

A bureau of information will be located in the University Hospital, and a buffet luncheon will be served in the same building between 1 and 2 p. m.

### Wills Hospital Eye Clinics.

The staff of the Wills Eye Hospital, Eighteenth and Race Streets, Philadelphia, will hold a special clinic for the benefit of delegates and visitors to the American Medical Association on Monday, June 3, at 2 o'clock.

### Alumni Night and Section Smokers and Banquets.

The local Committee of Arrangements desires to announce to the members of the American Medical Association that Tuesday evening, June 4, the first evening of the coming session, has been set apart as Alumni Night as well as for section smokers and banquets. Several college alumni have already arranged for reunions of the graduates who will attend the coming meeting to renew old acquaintanceships and to recall the events of college days. Dr. James W. Snowball, 1519 Pacific Avenue, Atlantic City, chairman of the Committee on Section and Alumni Entertainments, will give all information desired. Section officers who desire special banquets or smokers for Tuesday evening are requested to notify Dr. Snowball early so that proper arrangements may be made.

### Temperance Lunch.

For nearly twenty years the Temperance League has had a temperance breakfast at the annual meeting of the British Medical Association. Many eminent physicians of Great Britain have joined on these occasions and expressed themselves freely concerning the alcohol problem. At the Toronto meeting last year over 600 were present.

The Society for the Study of Alcohol and Inebriety proposes a similar movement at the coming session. A number of leading physicians, including nearly all the ex-presidents of the American Medical Association, have promised to speak. A warm invitation is given to all medical men and their wives to join on this occasion, and as the lunch and speeches will be limited to an hour or more in the middle of the day, it will in no way interfere with the regular work of the Association. The secretary, Dr. T. D. Crothers, of Hartford, Conn., will be pleased to give any further information.

### American Medical Association Outing Club.

This club is planning a nine days' trip through the resorts of New Jersey after the session. All members of the Association and their friends are invited to join the party. For further particulars address Dr. Edward R. Campbell, Bellows Falls, Vt., enclosing stamp for reply.

## THE COMMERCIAL EXHIBIT.

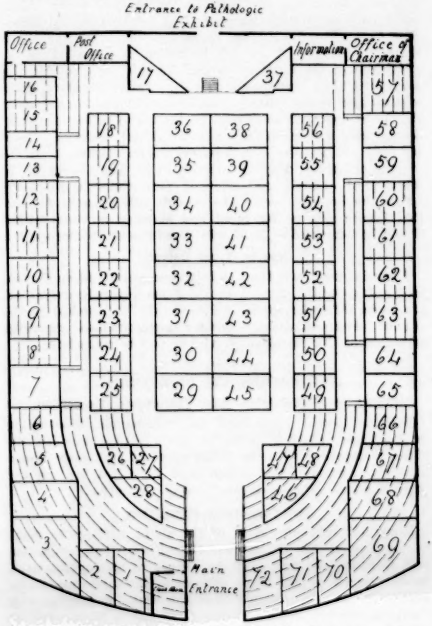
### The Exposition of Instruments, Apparatus, Remedial Agents, Literature and Physicians' Supplies at Atlantic City.

The most agreeable thing about any successful medical meeting is the solid satisfaction resulting from the interchange of ideas and the personal contact with men having the same aims and ideals. Probably the next most pleasing feature about such a meeting is the pleasure got by examining those various appliances, whether mechanical, chemical or pharmaceutical, which go to make up the physician's armamentarium. Then, too, there is no small amount of gratification to be had by looking over the choice specimens of the bookmaker's art that are to be found at these gatherings. The visiting physician will without doubt derive a keen pleasure from the Commercial Exhibit to be given at the Atlantic City session. This will be enhanced by the absence of some of the few objectionable features that have crept into previous displays. It has been the desire of the officers of the Association having supervision of the exhibit to have it excel in quality rather than in size. How well they have succeeded will be evident to those visiting it. The exposition will be held in the Marine Hall on Young's Pier. This pier extends from the well-known "Boardwalk" for over a quarter of a mile into the ocean. The Marine Hall is the third building from the pier entrance and its position frees it from the objection of too great publicity for a scientific display. It is a large rectangular building nearly 150 feet long by 100 feet wide. Its interior arrangement is that of an arena with low broad steps extending around its sides. This will permit of an artistic arrangement of the exhibits that could not be obtained on a dead-level floor. At the farther end of the hall and within it will be the post-office, general office, information bureau and office of the chairman. Just beyond the commercial exhibit and contiguous to it will be the pathologic exhibit. The Association members will have a special entrance to the pier, near which will be situated the registration department. All physicians are earnestly requested to visit the exhibit hall.

We mention below most of the firms that will be represented at this exhibit.

### Albosol Light Company, Philadelphia.—Space 22.

This firm will exhibit and demonstrate its neutral diagnostic light, albosol, which, it is claimed, projects an intense light of about one hundred and fifty candle power. The light is said to give colors their true value and it can be projected into any cavity of the body, where it shows plainly the various membranes in their true form and color. The apparatus for generating this light fits into a leather pocket case and weighs complete only seven and one-half ounces.




### W. D. Allison Company, Indianapolis, Ind.—Spaces 11 and 12.

Several styles of operating and examining tables, covering a wide range of usefulness for the gynecologist and genito-urinary specialist, will be shown by this firm. It will exhibit a complete line of instruments, medicine and combination cabinets and also a specialists' chair designed especially for eye, ear, nose and throat work. Experts trained in the handling of these appliances will be in charge of the exhibit, and will demonstrate the efficiency of these pieces of apparatus.

### Anatomik Footwear Company, New York City.—Space 42.

The shoes designed by Dr. Harlan P. Cole to take the place of braces in the treatment of deformities of the lower limbs will be displayed by this firm. Pictures will be exhibited of patients so treated and of the braces formerly worn. There will also be shown rational shoes for children and adults which this firm claims perfectly distribute the bodyweight. Such shoes, they say, prevent and relieve flatfoot and all strains, and obviate the use of supports of any kind.

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**D. Appleton & Company, New York City.—Spaces 47 and 48.**

This company numbers among its publications books by such authors as Osler, Holt, Bryant, Babcock, Kelly, Williams, Keyes, Tuttle and Forchheimer; men whose names are known not only to physicians, but to the world at large for their contributions to science and literature. The publications of this firm are mostly of the one-volume monographs for the use of the general practitioner.

**Armour & Company, Chicago.—Space 37.**

Special attention will be directed by this firm to the suprarenalin preparations, desiccated thyroids (U. S. P.) and to the extract of red bone marrow. The definite and uniform strength claimed for these suprarenalin preparations should insure uniformity as to dosage and results in their use. The use of desiccated thyroids has never been as extensive as it now is in the treatment of myxedema, cretinism, etc. This company's extract of red bone marrow is said to contain in a physiologically active form, the elements which increase formation of red blood corpuscles.

**B. & B. Apparatus Company, Salem, Mass.—Space 14.**

Portable high frequency, *x*-ray and electro-therapeutic apparatus and appliances will be exhibited by this firm. The exhibit will also include portable high frequency coils of recent design adapted for work by either direct or alternating current. Collapsible fluoroscopes, tube-stands, etc., intended for use in connection with a portable equipment, will be part of the display, as will also a coil operated static head breeze and other interesting devices and appliances.

**James Barker, Philadelphia.—Space 53.**

The makers of the Barker vibrators will have a competent representative in charge to demonstrate to visitors the unique features of these machines. The field of mechanical vibration is rapidly broadening and this firm claims the credit of having first brought before the medical profession for study and use the finest apparatus for the purpose that a large and thoroughly equipped plant can produce. A visit to its booth will doubtless be worth while, as the exhibit promises to be an interesting one.

**Baker Electric Company, New York City.—Spaces 31 and 32.**

This company will have on exhibition its various types of static machine. The revolving plates of these machines are made of a patent fibrous material, while the stationary plates are of glass. The manufacturers claim for these fibrous plates the property of high insulation and guarantee them not to warp, crack or scale. The large volume of current said to be developed by these machines is sufficient, when the speed is high, to melt the anode.

**Bausch & Lomb Optical Company, Rochester, N. Y.—Space 20.**

This exhibit will attract the physician who is scientifically inclined. The display of microscopes, microtomes, centrifuges, incubators, blood apparatus, etc., will be replete with interest. Some new and distinct models will be shown. The microscope to the modern physician is as necessary in diagnosis as the stethoscope. The centrifuge in urinalysis makes a microscopic examination possible in three minutes, which formerly required twenty or more hours.

**Frank S. Betz Company, Hammond, Ind.—Spaces 64 and 65.**

In addition to a general display of surgical instruments, hospital appliances and electrical apparatus, this firm will have as part of its exhibit a fifteen-inch *x*-ray coil and high frequency outfit combined. It also promises to have one of the finest exhibitions of surgical needles ever shown at a medical meeting. Besides these there will be shown several forms of lamps used in phototherapy. These will include the violet ray, the Finsen type and different kinds of incandescent outfits.

**P. Blakiston's Son & Company, Philadelphia.—Space 19.**

What is said to be one of the most thorough works of its kind, "The Treatment of Disease," by Wilcox, will be displayed by this firm. This work, which is just off the press, is the latest word in treatment and, therefore, supplements any other "Practice" the physician may have. Beck's "Surgical Diseases of the Chest" is another new book of this firm's which will be brought to the notice of visitors. A general display of its medical publications will, of course, be made.

**Burroughs, Wellcome & Company, England.—Space 40.**

This firm, which has recently opened a branch at 45 Lafayette Street, New York City, will exhibit a range of "Tabloid" and "Soloid" compressed drugs, etc. These preparations are claimed to be examples of unique accuracy of dosage and perfection of finish. Medical equipments of every description will be shown, fitted with medicaments suitable for all climates. These are exceedingly compact and can be carried in the pocket, in the carriage or motor car. Tabloid photographic chemicals for *x*-ray work, compressed sterilized dressings and other interesting products will be on view.

**Campbell Electric Company, Lynn, Mass.—Space 16.**

The *x*-ray and high frequency coil for which this firm claims such remarkable results will be on exhibit at its booth. Its simpleness, efficiency and the fact that it is always ready are a few of the qualities which the company wishes to demonstrate. The D'Arsonval and cautery attachment, with no interrupter to cause trouble and its two-year guarantee will force this instrument on the attention of those physicians whose work requires such apparatus.

**G. W. Carnrick, New York City.—Space 25.**

This firm will display its products, trypsogen and antithermoline, and will distribute a large supply of literature to physicians interested. The firm will also give a useful and appropriate souvenir to members of the Association. Visiting physicians will be cordially welcomed and inquiries relating to the products of this company will be answered by its representatives. Its product, antithermoline, will be exhibited in the new style glass container which is claimed to possess obvious advantages over the metal containers formerly used.

**Clark & Roberts Company, Indianapolis, Ind.—Space 33.**

A complete line of surgical furniture for physicians' offices and for hospitals will be the feature of this firm's exhibit. It is said to be especially high class, and all of the articles are designed for well-equipped offices and hospitals. The goods are made in accordance with the latest scientific principles and designed for thorough asepsis. The firm places particular stress on the finish of its goods, great care being taken with the enamel so as to make it both durable and handsome.

**Cleveland High Frequency Company, Cleveland, Ohio. Space 41.**

This company will show its high-frequency machines which work independent of a coil or static outfit, by simply plugging into any ordinary incandescent lamp socket. An expert on high-frequency currents will be in charge of the exhibit, to go into the subject from a scientific standpoint with any inquiring physician. The increased interest in high-frequency therapy will doubtless cause their expert to be kept busy.

**G. A. Crayen & Company, New York City.—Space 8.**

The Green Cross elastic band of Braun is one of the specialties this firm will exhibit. This bandage, which contains no rubber, is a cotton product with a stretching capacity of 50 per cent. If after long usage it shows a slight loss in elasticity, this property can be regained by cleansing it with soap and warm water. The Monachia wired plaster bandage will also be shown. This is claimed to possess the advantages of pliability, lightness, hardness and economy in use, and to be excellently suited for making longitudinal plaster splints.

**F. A. Davis Company, Philadelphia.—Space 50.**

The exhibit of these well-known medical publishers will contain several new publications of exceptional importance. Among them may be mentioned Fischer's "Diseases of Children," a volume of over 1,000 pages, profusely illustrated; Boas' "Diseases of the Stomach," translated by Bernheim, a work of great practical value to all practitioners; also Mendel's "Psychiatry," translated by Krauss, which takes up this subject on new lines calculated to simplify the study of mental diseases. These standard works will doubtless attract the attention of visiting physicians.

**Deimel Linen-Mesh Company, New York City.—Space 51.**

This company was incorporated in 1895 to exploit the fabric invented by Dr. H. L. Deimel. Its exhibit will show all styles and weights of linen-mesh underwear for men, women and children. By a special process of manufacture a soft, warm and porous fabric has been evolved, called the "Linen-Mesh." Since its introduction, 12 years ago, the product is claimed to have received the most friendly and grateful appreciation throughout the world. This exhibit will doubtless be one that will enlist the attention of the physician's wife.

**DeVilbiss Manufacturing Company, Toledo, Ohio.—Space 52.**

In treating diseases of the nose and throat the atomizer and nebulizer have each come to be recognized as a necessary part of the physician's armamentarium. This company will have on display in its booth the latest improved nebulizers and atomizers. Many of them are new and unique, and all of them of interest, not only to the specialist, but to the general practitioner. It recommends the atomizer for making applications to the superior respiratory tract and the nebulizer for the applications to the inferior.

**Electro-Surgical Instrument Company, Rochester, N. Y. Space 46.**

An interesting display of modern diagnostic instruments as well as of those appliances used in treatment will be given by this firm, which manufactures electrically lighted instruments. Here will be found cystoscopes, urethroscopes, auriscopes, bronchoscopes, proctoscopes, specula, etc. The lamps in these instruments are said to be of low temperature and high illuminative power. All instruments of the tube pattern are supplied with the auxiliary chamber for the reception of the light carrier and lamp, a feature of importance.

**Globe Manufacturing Company, Battle Creek, Mich.—Space 13.**

Electrically driven air pumps having among other special features double cylinders, compound compression, ball bearings, vacuum conversion, extra high power, automatic start and stop and automatic belt tightener will be one of the leading displays of this company. Its compressed air vibrator, which is adjustable for speed and length and force of stroke and gives direct impact and lateral movement, will also be shown. There will be in addition a complete line of nebulizer outfits, providing for vapor vibration and vapor massage.

**E. J. Hart & Company, Ltd., New Orleans, La.—Space 66.**

The leading exhibit of this firm will be its preparation, lacbismo. This liquid is claimed to contain the hydrated oxid and subcarbonate of bismuth carried to the greatest possible degree of subdivision. For this reason its covering capacity is said to be many times greater than that of either the subcarbonate or subnitrate salt of the same metal. Explanatory literature will be distributed and the firm's representative will be present at the exhibit.

**Horlick's Malted Milk Company, Racine, Wis.—Spaces 26, 27 and 28.**

The well and favorably known product of this firm will be on exhibit. To obtain milk produced under sanitary dairy conditions and as pure as scientific common sense would dictate is the object sought for and attained by this company. The hygienic dairying methods, as well as the superior malting of the grains in its own malt houses, have contributed largely, no doubt, to the success of Horlick's malted milk as a reliable, pure and nutritious diet for invalids and infants.

**Hughes Halm Company, New York City.—Spaces 11 and 12.**

This firm, which is the sole agent in New York and Philadelphia for the Allison office furniture, will also exhibit a line of instruments of its own manufacture. One of the most important of these will be the Bihlmaier vibrator. Several other specialties of more than ordinary interest that are handled exclusively by this company will contribute toward making its display one that will attract attention.

**W. T. Keener & Company, Chicago.—Space 49.**

A notable line of new medical books will be shown by this company. Among the most important will be found von Noorden's "Metabolism and Practical Medicine" in three volumes, and Green's "Encyclopedia and Dictionary of Medicine and Surgery." This encyclopedia, of which three volumes are now ready, will when complete consist of ten volumes. There will also be Morat's "Physiology of the Nervous System," Starling's "Recent Advances in the Physiology of Digestion," and a new edition of Yeo's "Manual of Treatment" adapted to the new Pharmacopeia. The exhibit will doubtless attract book-loving physicians.

**Keystone Electric Company, Philadelphia.—Space 18.**

This company, which manufactures "everything electrical," will give an exhibition of its high-grade electro-therapeutic instruments. Wall cabinets, galvanic, faradic and cautery batteries will be shown in various styles. High frequency and *x*-ray apparatus, leucodescent lamps and types of practically every kind of appliance used in electro-therapy will be displayed. The manager of the firm, Mr. Geiger, will have personal charge of the booth and will demonstrate the workings of all the apparatus.

**Lea Brothers & Company, Philadelphia.—Space 56.**

Medical literature will be well represented by this firm, the oldest medical publishers on the continent. Of interest to the profession will be the first volume of Osler's "Modern Medicine," a work to which the leading medical thinkers of the English-speaking world have contributed. Even the oldest practitioner regards with affectionate interest Gray's "Anatomy," his first investment in medical literature, which this firm has now published for just half a century. The long list of practical works and medical text-books will make the exhibit a Mecca for the studious.

**Charles Lentz & Sons, Philadelphia.—Space 54.**

The formaldehyd gas generator exhibited by this firm will prove to be of general interest. The heads of health departments are not alone concerned with methods of disinfecting, but the subject is a vital one to every general practitioner. This apparatus, therefore, which is claimed to be simple, efficient and durable as well as under the direct control of the operator, will interest many physicians. The firm will also have an exhibit of their surgical instruments and hospital supplies.

**J. B. Lippincott Company, Philadelphia.—Spaces 35 and 36.**

In addition to this firm's published line of excellent medical and pharmaceutical publications the attention of the medical profession will be called to several important books in active preparation. Among these books may be mentioned "Human Anatomy," by Piersol, and "Ortner's Treatment of Internal Disease," edited by Potter and translated by Bartlett. Also the "Diseases of Children," the American translation of which is edited by Shaw and Le Fetra, with an introduction by Holt; and "Roentgen Rays and Electro-Therapeutics," by Kassabian. The new nineteenth edition of the United States Dispensatory, published May 1, will no doubt attract considerable attention.

**Mellin's Food Company, Boston.—Space 23.**

The preparation for the home modification of cow's milk, manufactured by this firm, will be on exhibit. Especial attention will be given to the demonstration by test-tube experiments of the action of Mellin's Food on cow's milk. These will show how it inhibits the coagulation of the casein into the tough and indigestible curds which occasion the difficulty of digestion that is encountered so generally by the infant fed with cow's milk as commonly prepared.

**E. B. Meyrowitz, New York City.—Space 63.**

Various forms of *x*-ray and ophthalmologic apparatus will be displayed here. One of the more interesting will be the Priestly Smith Ward lamp, which has long and short focus lenses and uses a self-feeding candle as an illuminant. An ophthalmometer table which permits of accurate height adjustment, the Berger binocular loupé, lamp controllers, Holmgren's test worsteds, as well as eye, ear, nose and throat instruments, will make the exhibit one to attract the specialist in these lines.

**Modern Medicine Company, Battle Creek, Mich. Spaces 9 and 10.**

Here will be demonstrated therapeutic lamps of both the arc and Finsen type as well as the incandescent. An electric light bath cabinet will be in operation of the type originated and used at the Battle Creek Sanitarium. There will also be shown electric heating pads and electric blanket packs of this firm's make as well as other modern appliances such as sinusoidal apparatus, various vibratory machines, etc. The exhibit will be of interest to all physicians using the newer therapeutic agents.

**V. Mueller & Company, Chicago.—Space 61.**

This firm will show a line of first-class surgical instruments. These will include those for the eye, ear, nose and throat specialist and for the special worker in genitourinary diseases, as well as those for the obstetrician and general surgeon. This company imports the famous Weiss knives as well as those of other first-class makers. While making and selling a general line of surgical instruments it pays particular attention to the above specialties.

**Physicians' Supply Company of Philadelphia, Philadelphia. Space 21.**

Various types of sterilizers, nebulizers and centrifuges will be shown by this firm in addition to its exhibit of a complete line of high-grade surgical instruments. To add to the inter-

est in its display of general surgical apparatus, the latest special instruments will be shown. These will be such as are used by the best known American specialists and will no doubt attract many physicians whose work is along similar lines. The exhibit will unquestionably receive its full share of attention.

**Rebman Company, New York City.—Space 24.**

This firm, which makes a speciality of fine illustrations, will show many standard medical books illustrated by wood cuts in many colors and by lithographs of superior quality and excellence. Special attention will be directed to a new process which is said to give a true and lifelike appearance to illustrations of tissues and of clinical conditions. Special illustrations of the typical operations in surgery will be shown. There will also be standard books on electro-therapy, photo-therapy, etc.

**Reinschild Chemical Company, New York City.—Space 55.**

The exhibit of this company should be of decided interest. It includes the products of Dieterich, who fathered the process of combining metals like iron and manganese, as well as the elements bromin and iodin, with albumin and peptone. This resulted in the issue of ferro-mangan, bromo-mangan and iodo-mangan. In addition to its pharmaceutical products there will be shown a special zinc plaster for Dr. Rose's abdominal bandaging.

**W. B. Saunders Company, Philadelphia.—Spaces 29 and 45.**

Facing the main entrance will be the two booths occupied by this firm, at which physicians will be invited to examine at their leisure the list of publications on exhibit. Among the new books published by Messrs. Saunders during the past year of particular interest are Keen's "Surgery," Kelly and Noble's "Gynecology and Abdominal Surgery," Howell's "Physiology," Eisendrath's "Surgical Diagnosis," and Fowler's "Surgery." Advance sheets and illustrations of books in preparation will also be there for examination, and every opportunity will be given physicians to see the firm's various publications.

**W. Scheidel Coil Company, Chicago.—Space 58.**

This company will exhibit one of its latest combination *x*-ray coils for rapid skiagraphic work. A feature of the machine is the marble switchboard from which absolute control of the coil is obtained, including electrolytic and mercury interrupters. A double resonator for high frequency currents, requiring much less space than former styles, but having an increased efficiency, will also be on exhibition. Incidentally there will be a number of other features that will contribute much to the interest of the exhibit.

**Schieffelin & Company, New York City.—Space 30.**

Lederle's refined and concentrated diphtheria antitoxin will form an interesting and important part of this firm's exhibit. There will be given a demonstration of antitoxic serum refinement, showing elimination of the non-antitoxic substances of whole horse serum. This personally directed exhibit will also have a comparative display of antitoxic sera, etc. Articles which are generally known to the profession, such as hemoquinin, heromal, uriform, heroterpin and neuronida, together with a general line of pharmaceutical products, especially pills and granules, will make this firm's exhibit one of interest.

**Smith, Kline & French Company, Philadelphia.—Space 44.**

This company will have an exhibit of Eskay's Albumenized Food, with the raw materials used in its manufacture, and demonstration tubes showing the manner in which it modifies cow's milk. In addition there will be shown photomicrographs of the exterior and interior views of various starch grains. It is stated that the exhibit will disclose new knowledge regarding the structure of the starch grain that should be of great scientific interest. Literature regarding the food will be furnished and a useful souvenir presented to each physician visiting the exhibit.

**Spear-Marshall Company, Chicago.—Space 39.**

The leucodescent therapeutic lamp which this firm exhibits will, on account of the new features that have been added to the equipment, be an object of interest. This apparatus, it is claimed, is now recognized as a necessary part of every practitioner's armamentarium. Its effect, they say, is anodyne, analgesic and bactericidal, and by inducing an active hyperemia it favors metabolism. Physicians who want to know what this lamp is and what it will do will be able to investigate, as daily demonstrations will be given.

**Arthur H. Thomas Company, Philadelphia.—Space 34.**

This firm, which imports and deals in microscopes and general laboratory apparatus, will have a comprehensive display of its goods on exhibit. Portable folding microscopes, blood pressure apparatus, appliances for the analysis of blood and urine and the various stains, preservatives, etc., used in histologic and pathologic work will make up part of this firm's exhibit.

**Trommer Company, Fremont, Ohio.—Space 6.**

Here will be displayed by this firm its preparations of malt extract. This product can be had plain, in combination with cod liver oil and also combined with hypophosphites. The preparations have been before the profession for 35 years and it is claimed that their popularity attests their value. The veteran Dr. Paul Plessner, who has represented the firm for 30 years, will have charge of the exhibit for the company.

**United States Oxygen Company, New York City.—Space 7.**

This firm will display its oxygen compound, which consists of two parts pure oxygen, one part of nitrogen monoxid and 1 per cent. ozone. Its purity and non-irritating properties are the points that will be emphasized by its manufacturers. The company will also show its private ambulances in which invalids can be transported in the most careful manner. The novelty of the exhibit will make it one of the attractive features of the hall.

**Victor Electric Company, Chicago.—Space 43.**

Here will be displayed by this firm all its leading specialties, including some ten types and varieties of vibrators, a number of wall plates and cabinets for delivering all forms and combinations of the galvanic and faradic modalities. There will be, too, a number of therapeutic lamps, equipments for bone surgery, air compressors and appliances for eye, ear, nose and throat specialists (including giant magnets, air heaters and head lamps), and sinusoidal outfits, galvano-cautery apparatus, generating sets, motors, etc.

**R. V. Wagner Company, Chicago.—Space 59.**

An exhibit of unusual interest is promised to all *x*-ray and electrotherapeutic workers by this company. It will exhibit for the first time a noiseless high-speed static and *x*-ray equipment and will demonstrate the efficiency of the apparatus under the damp conditions of an ocean pier. It will also exhibit for the first time a new tube stand having unique and valuable features. This new apparatus, together with its complete line of physicians' electric supplies, will make this firm's exhibit an interesting one from a scientific as well as a practical standpoint.

**Wappler Electric Controller Company, New York City. Space 60.**

The new mechanical interrupter exhibited by this firm is remarkable in that it does away entirely with the use of acids and may be used for ten consecutive hours. The sinusoidal machine which will be demonstrated is claimed to be the only true sinusoidal on the market and is said to be without a rival in the treatment of atonic conditions of the involuntary muscles. The Brown cystoscope with the new lens system will also be shown, as well as a combination cautery motor with pump and vibrator.

**Welch Grape Juice Company, Westfield, N. Y.—Space 17.**

This firm believing that the "proof of the pudding is in the eating," will demonstrate the value of their product by serving it gratis to the visiting physicians. The claim of absolute purity is made for this product, which is manufactured from the unfermented juice of choice Concord grapes. This booth promises to be one of the most artistic in the hall with its display of grapes and vines, and will probably attract the attention of all visitors.

**William Wood & Company, New York City.—Space 38.**

As one of its most notable works this firm will exhibit the "American Practice of Surgery," edited by Bryant and Buck. Walsh's "Roentgen Rays in Medical Work" is another book that will come in for a share of attention. The company will, of course, have a general selection of its best publications on display.

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[*For other information see second page following reading matter.*]

SATURDAY, MAY 4, 1907.

## PERITONITIS AND THE ABSORPTION OF BACTERIA FROM THE PERITONEAL CAVITY.

A series of experiments on the processes of absorption from the peritoneal cavity, by Dr. B. H. Buxton,[1] have yielded results which are of great interest in connection with the problems of the treatment of peritonitis, supporting strongly the growing tendency of many surgeons to reduce intra-abdominal manipulations to a minimum. The favorable results of the semi-sitting posture, and the claimed disadvantages of peritoneal irrigation are also explained clearly by the observations on experimental animals. These experiments demonstrate the extreme rapidity with which bacteria injected into the peritoneal cavity are taken up; within five minutes they are found in the blood in great numbers, and in smaller numbers in the liver and spleen. Even greater numbers are found in the lymph nodes of the anterior mediastinum, which they reach from the diaphragm, where absorption occurs chiefly and most rapidly. A large number of bacteria are also entangled by a fibrinous exudate on the surface of the omentum, where many are taken up by phagocytes, while some enter the omental lymphatics and are absorbed by this route. However, there seems to be practically no absorption of bacteria by any other part of the peritoneum besides the diaphragm and the omentum; the parietal and visceral peritoneum and the mesentery do not seem to possess this function to any considerable degree.

When such an organism as the typhoid or colon bacillus is injected into the peritoneal cavity, even in very large numbers, the bacteria that enter the blood disappear again very rapidly, so that the greater proportion vanish in less than an hour, even in animals that subsequently die. This initial destruction of the bacteria seems to be due largely to the bactericidal power of the blood, and is nearly complete by the end of two hours; from two hours to six hours the number of bacteria increases somewhat, but from six hours up to forty-eight hours there is again a period of decrease which is probably due largely to phagocytes. Animals which die as a result of intraperitoneal injections of typhoid or colon bacilli succumb either about two hours after the injection, or else they survive for twenty-four hours or more; they seldom die during the interval between four and twenty-four hours. The reason for this seems to be as follows: The colon and typhoid bacilli contain a large amount of intracellular toxic materials (endotoxins) which are not liberated until the organisms are disintegrated. Consequently, when an animal takes up a great quantity of these bacteria from the peritoneum and destroys nearly all of them within the space of an hour or so, an overwhelming dose of the poisonous intracellular toxins is liberated, and the animal succumbs at once, in spite of the fact that it has killed most of the bacteria that have been injected. In case the dose of endotoxins thus liberated is not fatal, the animal may recover, or may succumb to a later multiplication of the bacteria twenty-four hours or more after the injection. With the streptococcus the case is different, for this organism is not so rapidly destroyed after injection, and hence a primary overwhelming with endotoxins does not occur; as a result death does not follow until there has been time for an extensive multiplication of the cocci, after twenty-four hours or more.

It seems possible to apply these observations directly to the subject of the surgical treatment of peritonitis. First, we find that in acute peritonitis the danger is not so much from absorption of bacterial toxins, as from absorption of the bacteria themselves. The bacteria seem to enter the blood largely by way of the lymphatics, and they are absorbed chiefly through the lymph channels of the diaphragm; in this process omentum plays an important protective rôle by entangling bacteria and intercepting their passage toward the diaphragm. Absorption of bacteria occurs but little or not at all through the parietal, visceral and mesenteric peritoneum, hence the favorable outcome of peritonitis localized in the lower portion of the abdomen. In peritonitis following perforation, in which the chief organism is the colon bacillus or the typhoid bacillus, surgical intervention has sometimes been followed by death in a few hours, and this outcome has generally been ascribed to shock. Buxton suggests that in these cases death is really due to the entrance into the blood of large numbers of bacteria, which is decidedly favored by the disseminating forces of irrigation, and that instead of shock we really have an overwhelming intoxication with intracellular toxins liberated through the disintegration of the absorbed bacteria. Streptococcus peritonitis seems seldom to cause death in this way, the patient generally succumbing twenty-four or more hours after operation. Apparently, this organism reaches the circulation readily through generalizing infection, whether there is irrigation or not; but it is not rapidly destroyed, and hence there is no sudden intoxication with endotoxins. Later, after the cocci have multiplied greatly, enough toxins will be liberated to cause death. In the case of colon or typhoid infection, if not enough bacteria enter the blood to cause fatal intoxication at once, the infection may either be successfully terminated, or the bacteria after a time may begin to multiply in the blood and tissues, with a resulting fatal intoxication after

1. Jour. of Med. Research, 1906, xv, pp. 3-88; and 1907, xvi, pp. 17-42.

a period of two or more days. In any event, these experiments emphasize the importance of the measures which are now being so successfully adopted by many surgeons, the aim of which is to keep bacteria away from the diaphragm by means of posture and the avoidance of irrigation. Furthermore, it is to be remembered that pus is not exclusively a dangerous substance; its danger depends on the number and kind of bacteria it happens to contain, for the pus elements themselves are protective agents. To quote from Buxton: "Pus in the cavity appears to the surgeon as something to be washed away, but it is precisely in the pus that there is protective action due to the innumerable phagocytes which it contains."

While Buxton's experiments support the attitude taken by those surgeons who oppose intraperitoneal meddling in general peritonitis beyond such measures as are necessary to remove the source of the infecting agent, yet it will be noted that they give a different explanation of the facts than has generally been adopted by the surgeons. The latter have considered that trauma of the peritoneal coat opens up avenues by which bacterial toxins enter the blood, whereas the animal experiments indicate that irrigation, sponging and similar measures are dangerous chiefly because they disseminate the bacteria so that large quantities can be taken up rapidly by the lymphatics of the diaphragm. This is particularly the case with peritonitis due to the colon-typhoid group of organisms.

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## IMPULSE, CRIME AND PUNISHMENT.

It is now generally recognized that certain crimes are committed under the influence of impulses so strong as to be practically irresistible. The circumstances in which impulses become so strong have been much discussed. It is recognized that if a man has done irrational deeds early in life, that is, if he has performed serious acts entirely disproportionate to the motive urging him to their accomplishment, he is lacking somewhat in responsibility. If to this be added the fact that there is a nervous heredity, that is, that certain members of the family in previous generations have behaved irrationally, especially in crises of conduct; then, in the opinion of many authorities, responsibility seems to be seriously impaired. These are practically the doctrines that the medical profession, in the progress of its growing knowledge of mental diseases, has labored, with no inconsiderable success, to graft on our criminal code, until now most murder trials have them brought to the fore to such an extent as to require expert testimony; and no criminal trial of importance occurs without at least some reference to insanity. At times, as in a recent noteworthy example, most of the attention of lawyers, judge, jury, and, above all, the public, is riveted on this aspect of the case. In so doing the medical profession has taken on itself great responsibility, and it is well to view from a common-sense standpoint the consequences that may follow the application of these principles.

Anyone who has had any experience with those of diseased mentality is aware how cunning such people can be. Everyone knows how carefully men and women of distinctly lowered rationality may plan in order to secure some wished-for result. Many of the murders of keepers that occur in asylums are thought out beforehand with diabolical ingenuity in order to secure the hoped-for result. All who have had much to do with such people know, too, that practically the only thing which keeps many of them in proper submission is the deterring influence of punishment and the ignominy (for they have very acute feelings in such matters) that will come as the result of an unsuccessful attempt. In spite of the fact, then, that they are irrational and are ready to commit crime under the influence of practically uncontrollable impulse and without any proper reason, they are deterred from it by the thought of punishment and disgrace. In a word, though acting irrationally, they yet realize the nature of their act and, if punishment were certain to follow, would be deterred from it.

If we continue to loosen the claims of justice on all those who commit crime on impulse we shall lose those deterring influences of due condemnation and just punishment which are even greater over those of lowered mentality than over rational individuals. There are not many now who think that capital punishment is justified as a compensatory factor. Most persons consider that its deterring influence is the only reason for maintaining it. As a matter of fact, under the circumstances that surround many fatal crimes, responsibility is more or less impaired at the moment of commission. Men, however, put themselves in the conditions in which they know that such impairment may take place and are consequently responsible for their acts, though these may not be done with entire deliberate free will at the moment. If the present trend of medical opinion is not properly safeguarded in its diffusion among the public, many of those who are a little irrational and who are conscious of the fact that these irrationalities and certain hereditary traits may prove sufficient to keep them from capital punishment, will be tempted to the commission of crimes by violence. There are many more people than is ordinarily imagined who are more or less irresponsible, who can not be taken care of by friends, nor committed to asylums. For them the deterrent effect of capital punishment or indefinite loss of liberty is society's only protection. This fact will have to be taken into consideration or we shall have a veritable epidemic of crime against human life (which seems, indeed, to be beginning) because of lack of punishment. Insanity ought not to prevent conviction for murder, but the fact that it is a mitigating circumstance ought to change the punishment to confinement in an asylum.

Andrew D. White said not long since that human life is cheaper in this than in any other country in

the world except Sicily. The delays of justice and the many loopholes of our criminal procedure are responsible for this condition. Is it not possible also that the medical expert has added to it? At least we must be careful that all sides of this important question of responsibility be considered. It is better that ninety-nine guilty should escape than that one innocent man should be punished, but impulsive criminals are not innocent in the real sense of the term. The only motive that will keep many of them from cunningly taking advantage of the present trend of opinion is to maintain the sanction of law by properly meted out punishment, whether capital or not depends on circumstances, but with the stigma of a murder verdict properly to characterize the crime.

## ROENTGEN-RAY CASUALTIES.

Examples attesting the dangers due to the unskillful use of the *x*-ray are becoming of rather disconcerting frequency. Here we read of the inhibition of muscular action; there of the appearance of indolent malodorous ulcers which take many months to heal. All will recall the fate of Dr. Weigel of Rochester, who was so injured during his experiments that first three fingers of his left hand had to be amputated, then his left hand, then his left arm at the elbow and later at the shoulder. Death, however, was inevitable.

The death of Wolfram C. Fuchs, of Chicago, on April 24, is the most recent in a dreadful series of disasters which must be attributed to the *x*-ray. Mr. Fuchs first became afflicted in 1905, and in the fall of that year the first joint of the right thumb was removed; from that time to his death he underwent five other operations, first for the removal of portions of the fingers of both hands, and later for a removal of the muscles of the right pectoral region. Other victims have been an assistant to Thomas A. Edison, a Boston colleague, and Bertha Fleischman, of San Francisco.

Pitkin[1] some time ago warned us against the destructive properties of the *x*-ray. Its effects are cumulative; the danger to the operator increases in a compound multiple ratio, with nearness to the tube, its size, hardness and degree of excitement, the number, frequency and duration of exposures; with physical conditions below par. The operator is apt to be injured without premonition. After a time the color of the hands and face changes; on this swelling ensues; then a few pruritic papules or pustules, with bran-like scales; or an "itching" warmth, local diaphoresis cutis anserinus and a glossy appearance of the parts, with edema. Muscular action becomes inhibited. Further exposure induces inflammation, disintegration, intense itching, with successive crops of papules, followed by a honeycombing of small, indolent ulcers which may become confluent, with a sanious malodorous discharge. As sequelæ may occur loss of skin, with the appendages, dreadful disfigurements—scars, pits and pigmentation—the loss of sebaceous and sweat glands, anesthesia, hyperesthesia to all forms of radiant energy, increased vasomotor activity; defective vision, and many other most unfortunate manifestations.

That Pitkin's warnings received not nearly the respect that ought to have been paid them was evidenced by the observations subsequently made by Brown and Osgood[2] in some eighteen cases of *x*-ray workers who had consulted them. These colleagues had been men in robust health, whose ages ranged from 22 to 40 years. Twelve of them had operated *x*-ray tubes from one-half to four hours at least thrice a week during the greater part of each year for from two to six years past. Six of them suffered more or less severe dermatitis of the hands. It was demonstrated, moreover, that the emanations from the tube are capable of affecting subdermal tissues without apparently affecting the skin itself. Brown and Osgood have found also that repeated prolonged exposure in an *x*-ray atmosphere produces sterility in the human subject. And this phenomenon has received repeated corroboration by Pitkin, Foersterling, Schmidt, Lassar, Geyser and others, who have found the *x*-rays destructive of embryonic life and who have not only sterilized by this means mature rabbits, guinea-pigs and fowls, but have also retarded the growth of the young. The destructibility of this agent when applied to seeds and grasses has been abundantly demonstrated.

The German Roentgen Society, meeting recently in Berlin, has recommended that the use of the *x*-ray be restricted to licensed practitioners. In any event the use of this agent should not be permitted the unscientific or the unscrupulous. Adequate protection to all parts of the patient's body not directly exposed for examination or treatment should be universally provided, else a perfectly just malpractice suit may be incurred.

The physician should learn from the many precautions now set forth in the literature for his benefit how to guard himself against the injurious effects of the *x*-ray, as well as to profit by "the beneficent effects of the force at which we have all marveled since Roentgen's discovery put into the hands of the medical profession this great aid to our diagnosis and gave impetus to the development of a valuable addition to our therapeutic measures."

## THE ADVERTISING SWINDLER.

Opinion on any subject is largely dependent on the mental perspective. Only on such an assumption can we explain those incongruities of thought and action which we see daily. A case much to the point is exhibited in an editorial that appeared in a Chicago evening paper of recent date.[1] In referring to the aid given an unscrupulous but plausible advertiser by the press in sell-

1. Pitkin (J. T.): Dangers of the *X*-ray, Virginia Med. Semi-Mo., Feb. 12, 1904.

2. Brown (F. T.) and Osgood (A. T.): *X*-rays and Sterility, Amer. Jour. Surg., April, 1905.

1. Chicago Daily News, April 16, 1907.

ing him advertising space in which to exploit his get-rich-quick schemes, the paper sums up as follows: "It is an outrage for any newspaper to trade on the trustfulness of its readers in order to share in the profits of swindlers. Reputable patrons of newspapers should demand that they cease to be the beneficiaries of financial sharks through the acceptance of advertising which has fraud written all over it in the light of ordinary business judgment. A newspaper must be honest in its advertising columns as well as elsewhere in order to be really honest." The sentiments expressed are commendable, though—considering the case—somewhat trite; the policy outlined is praiseworthy—and likewise obvious. The incongruity of the thing becomes apparent when we glance through the advertising pages. The notorious "hypothetical cocktail" Peruna, and the equally well-known alcoholic nostrum, Lydia Pinkham's Compound, are found occupying conspicuous places. Mother's Friend, one of those damnable concoctions whose advertisers play on the feelings of dread, uncertainty and fear that possess the expectant mother, is seen shouting its blatant warnings with scare headlines. Cures for drunkenness, cures for Bright's disease, cures for rheumatism and cures for epilepsy, each has its appointed place in this gallery of frauds. Must we conclude that the editor believes that "Bright's disease of many years standing" was "entirely cured with Warner's Safe Cure;" that Golden Remedy "never fails to cure the worst cases of drunkenness;" that S. S. S. positively "cures skin diseases of every form"? Are we to understand that the editor honestly subscribes to all this? Editorial opinion would seem to oppose the idea that the same rule holds with this paper as obtains in some medical journals: To keep the editorial and advertising departments entirely distinct. But examination of the paper forces us to the conclusion that the business policy of the paper is not reflected in the editorial columns. Is it possible that the returns from fraudulent medical advertisements are sufficiently large to purchase immunity to criticism? This much at least is certain—so long as the paper continues to exploit such frauds, so long is it trading "on the trustfulness of its readers in order to share in the profits of swindlers." In giving space to these nostrums, advertising is accepted "which has fraud written all over it in the light of ordinary business judgment." As is said in another part of this same editorial, the "fact that a trusted newspaper permits him" (referring to the financial instead of the medical shark) "to do his lying under its auspices, convinces the credulous and they place"—not their savings, as in the case written of—but their health and lives "in his unscrupulous hands."

## WHAT IS FEVER?

Various definitions of the febrile process have been given, but none is entirely satisfactory by reason of the incompleteness of our knowledge concerning the underlying mechanisms. Fever has been attributed to excessive oxidation, but convincing demonstration is lacking that increased amounts of oxygen are constantly taken up by the body and increased amounts of carbon dioxid are constantly given off, or that an increased amount of heat is generated or a deficient amount dissipated. That fever and pyrexia are not one is generally recognized, although the latter usually, though not always, accompanies the former. Dr. Woods Hutchinson[1] indulges in an interesting disquisition on this subject, expressing the view that the phenomena of fever appear to be due to a general disorganization and perversion of normal metabolism by toxins, with conversion of the energy ordinarily expended in secretion, growth, motion, etc., into the waste product, heat. He holds that metabolism is less active during the febrile process than in health, and that it is chiefly destructive instead of constructive. The resulting harm is due not so much to the elevation of temperature as to the action of toxic substances, which, if present in sufficiently large amounts or of a certain degree of virulence, may actually depress the temperature below the normal. When elevation of temperature does take place it may perhaps play the part of a secondary protective agency, affecting unfavorably the active pathogenic micro-organisms. In Hutchinson's opinion the "standard" of fever should be an increase in the daily range of temperature in excess of 1.5 degrees Fahrenheit.

## THE ATLANTIC CITY SESSION.

The fifty-eighth annual session of the American Medical Association will be held June 4 to 7 at Atlantic City, and we devote several pages this week to a description of that popular resort. The preliminary program of each section is also published, and a glance at the titles of the articles will show that a high grade of scientific work is in store for those who attend the meetings. This will make the third time that the Association has met at Atlantic City, and consequently a description of the town is hardly necessary for many of our readers. Since the last meeting there, however, the membership of the Association has nearly doubled, and in any event this seaside resort has so many attractions that its advantages will bear repetition. It is the ideal meeting place for the reason that it has ample hotel accommodations of a character to suit both those who want to pay but a moderate price as well as for those who desire all the luxuries. The railroad rates this year are very low—practically one fare for the round trip—but what is of special advantage is the fact that the time limit is longer than on former occasions. As will be noticed by a reference to the paragraph on railroad rates, members may get an extension to June 18. This will give an opportunity to utilize the clinics, etc., that are to be given in Philadelphia during the week following the Association session, to recuperate on the seashore or to enjoy a side trip to the famous eastern metropolis, New York, or to the Jamestown Exposition, perhaps by a delightful boat trip on the picturesque Chesapeake Bay, or to stop for a few days in the Nation's Capitol. The Atlantic City people are making as elaborate preparations as were made at any former session, and they are evidently determined to make the visit of the members of the Association an agreeable one. While it is impossible to prophesy so early, the present indications are that the attendance at the coming session will equal, if it does not exceed, that of last year at Boston.

1. Practitioner, April, 1907, p. 496.

# Medical News

## ALABAMA.

**Medical Journal Company Incorporated.**—The Alabama Medical Journal Company has been incorporated at Birmingham with a capital stock of $3,000. The company has purchased the *Alabama Medical Journal* from the estate of the late Dr. John C. LeGrande, and intends to continue the publication of the journal.

**Personal.**—Dr. Willis W. Scales, Mobile, has been appointed assistant surgeon in the United States Public Health and Marine-Hospital Service.——The following staff of the Mobile City Hospital is announced: Surgeons, Drs. William McD. Mastin, George E. Gavin, Douglas G. Campbell and William G. Ward; physicians, Drs. Joseph Schwartz, Ernest S. Feagin, James J. Peterson and Nicholas A. Madler; obstetrician, Dr. Percy J. Howard; pathologist, Dr. Neal E. Sellers, and dermatologist, Dr. M. Toulmin Gaines.

## CONNECTICUT.

**Venerable Practitioners.**—Dr. Ralph J. Griswold, Greenwich, will celebrate the fiftieth anniversary of his entry into the practice of medicine, April 15.——Dr. Gurdon W. Russell, Hartford, for many years medical director of the Ætna Life Insurance Company, celebrated his ninety-second birthday anniversary, April 10.

**Vital Statistics.**—The vital statistics of Connecticut for 1905, about to be published, shows that 23,271 births were recorded in the year, an increase of 407 over the previous year, and the highest number ever recorded. The number of marriages recorded was 8,075, or 440 more than for the previous year. There were 16,298 deaths, or 16.4 per 1,000, which is a slight increase as compared with the previous year.

## DISTRICT OF COLUMBIA.

**Personal.**—Dr. Luther H. Reichelderfer, superintendent of the Garfield Memorial Hospital for seven years, has resigned to enter private practice, and has been succeeded by Dr. Wayne F. Cowan.——Dr. Eugene L. LeMerle has been appointed by the commissioners medical inspector in the contagious disease service, vice Dr. C. Norman Howard, resigned.

**New York Milk Barred.**—The Department of Health of the District of Columbia, in its battle for the certification of all milk, has rejected the permits of certain New York shippers and considers the ordinance at present before the Board of Aldermen in New York City as mild in its requirements as compared with regulations in the District of Columbia. The District also declares that cows imported from the Empire State are more generally affected with tuberculosis than are those from other states farther south.

## ILLINOIS.

**Personal.**—Dr. Edward Hassen, Peoria, has been appointed a member of the local Board of Pension Commissioners, vice Dr. Alvin N. Keith, resigned.——Dr. Downing D. Nice and family, Bowen, will leave in a few weeks for their new home in California.——Dr. and Mrs. Hiram E. Johnson, Fairbury, have returned from Crescent City, Fla., where they spent the winter.

**State Society Meeting.**—The annual meeting of the Illinois State Medical Society will be held in Rockford May 21 to 23. The local committee announces that the places for holding meetings will be within one block of the principal street of the city and within three blocks of all the hotels. The general session and sessions of sections will be in the Church of the Christian Union, and the House of Delegates and committees will meet in the Soldiers' and Sailors' Memorial Hall. A novel feature of the scientific portion of the meeting is the joint sessions of the medical and surgical sections. A part of the section is to be devoted to medicine, another part to surgery and a third to borderland topics. On Wednesday night a banquet is to be given, at which special honor is to be paid to Drs. John H. Hollister, Chicago, and E. O. Ensign, Rutland, who celebrate the fiftieth anniversary of their membership in the society.

### Chicago.

**Scarlet Fever Spreads.**—Scarlet fever is reported to be prevalent and threatens to become epidemic in South Chicago.

**Personal.**—Dr. and Mrs. Daniel R. Brower have returned from a trip to Egypt and Palestine.——Dr. and Mrs. Clifford G. Grulee sailed for Europe April 27.

**Auto Run to Rockford.**—It is reported that 50 physicians of the city expect to participate in an automobile run from Chicago to Rockford, May 20.

**Emergency Inspectors Discharged.**—The 259 employés of the health office, whose services were secured during the recent scarlet fever epidemic, have been discharged on the expiration of the period for which they were engaged.

**X-Ray Expert Dies.**—Wolfram C. Fuchs, one of the earliest and best known exponents of the Roentgen ray, died at his home in Chicago, April 24, from cancer, said to have been due to prolonged exposure to the Roentgen rays. Mr. Fuchs was an electrical engineer, but became interested in the *x*-ray treatment of disease when Roentgen's researches were first published, and was one of the first in Chicago to use this method of treatment and to take *x*-ray photographs.

**Deaths of the Week.**—The deaths for the week ended April 27 were 678, or 61 more than for the preceding week, the respective annual death rates being 16.77 and 16.26 per 1,000. Of the chief death causes, pneumonia was responsible for 118 deaths; heart disease for 63; consumption for 55; Bright's disease for 43; violence, including suicide, for 39; and acute intestinal diseases and cancer, each for 30. Scarlet fever caused 17 deaths, diphtheria 13, influenza 7, whooping cough 6, measles 5 and typhoid fever 3.

**The New Health Commissioner's Creed.**—In the first communication of Health Commissioner Evans he addresses his co-workers as follows:

If we succeed it will be due to three factors:

1. The efforts of Drs. Whalen, Reynolds and their predecessors, who have increased the efficiency of the department year by year until it has reached its present position. I wish sincerely to acknowledge our debt to them.
2. The support of the men of the department.

I must have their help, not only in matters of routine, but in planning and managing and in solving great community problems. It must be our department.

3. We must have the support of the people and the press.

## MARYLAND.

**Site for Sanatorium Bought.**—The Maryland Tuberculosis Sanatorium has purchased, for $10,000, 192 acres at Sabillasville, as a site for a tuberculosis sanatorium.

**School Rooms for Epileptics.**—A canvass of the public schools of Baltimore shows that there are 51 children suffering from epilepsy. The school board has decided to establish two or three special classes for epileptic children, beginning with the next school year.

**Society Meeting.**—At the annual meeting of the Montgomery County Medical Society, held in Rockville, April 16, Dr. James E. Deets, Clarksburg, was elected president; Dr. Charles Farquhar, Olney, vice-president; Dr. John L. Lewis, Bethesda, secretary and treasurer, and Dr. Horace B. Haddox, Gaithersburg, censor.

**Personal.**—Dr. Montgomery E. Higgins, Boyds, has returned from Panama, and expects to leave this month for Europe.——Dr. Frederick H. Baetjer, assistant in actinography at Johns Hopkins Hospital, Baltimore, was operated on for appendicitis, April 19.——Dr. Charles G. McGill, Catonsville, is reported to be critically ill.——Dr. L. Gibbons Smart has leased a house with 11 acres of land, near Lutherville, for a private sanitarium.——Dr. Henry W. Hodgson has been elected president of the Lonaconing Club.

**Tuberculosis Sanatorium.**—About 200 acres of land in Frederick County, near Blue Ridge Summit, has been purchased for the Maryland Tuberculosis Sanatorium. The site is 1,500 feet above sea level and the buildings are already in process of construction. Accommodation will at first be secured for about 75 patients. At present, $90,000 is available for the institution, but it is hoped that $150,000 may be appropriated to complete the buildings and to increase the annual appropriations for maintenance from $15,000 to $20,000.

### Baltimore.

**Measles Prevalent.**—During the week ended April 13 there were 105 cases of measles reported with 5 deaths, as against 10 cases in the corresponding week of last year.

**Personal.**—Dr. Henry Barton Jacobs has been elected a member of the Maryland Tuberculosis Commission.——Dr. Ira Remsen of Johns Hopkins University was elected president of the National Academy of Sciences at its meeting in Washington, April 17.——Dr. Roland B. Whitridge has gone to Europe for several months.

**Hospital for Hebrew Consumptives.**—Mr. Jacob Epstein has given $25,000 toward the establishment of a hospital for Hebrew consumptives, with the understanding that the management of the institution shall be assumed by the Federated

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Jewish Charities. Four individuals have offered $500 annually toward the maintenance of the hospital, and a special committee has been appointed to consider ways and means.

## MASSACHUSETTS.

**Diphtheria.**—An outbreak of diphtheria is reported at Milton and Dorchester Lower Mills, where more than 50 cases have been reported, with two deaths.

**Fitchburg in Line.**—Fitchburg has organized an association for the prevention and cure of tuberculosis, and among its officers are Drs. Frederick H. Thompson, Cordelia M. Whittier and Herbert J. Wallace.

**Medical Library Committee.**—A committee consisting of Drs. Walter H. Chapin, Walter R. Weiser and James B. Comins has been appointed to confer with the physicians and medical societies of Springfield, to determine what amount the physicians of the city will agree to give annually per capita for the support of a medical library.

**Personal.**—Dr. Thomas J. Scanlan, Dorchester, Boston, has been nominated as physician of the fire department.——Mr. Alexander M. Wilson, Boston, who has been superintendent of the Massachusetts Association for the Relief and Control of Tuberculosis, has resigned, to take charge of the Chicago Tuberculosis Institute, and will take up his work there June 1. ——Dr. Edmond A. Bazin, Haverhill, was seriously injured in a runaway accident, April 18.——Dr. Willis L. Tucker has been appointed town physician of Hinsdale.——Dr. James J. McDevitt, East Boston, has been appointed deputy health commissioner.——Dr. James R. Berwick, Methuen, has been re-elected town physician.——Dr. Albert Taft has been removed from his position as resident physician at the Penal Institutions, Deer Island.

## MISSOURI.

**Graduation.**—The annual commencement exercises of the St. Louis College of Physicians and Surgeons were held April 26. Dr. Waldo Briggs, dean of the college, conferred the degrees and Dr. Otto Sutter delivered the faculty address.

**Hospital Notes.**—The Board of Directors of Provident Hospital, which was established twelve years ago by a number of physicians and citizens for the care and treatment of colored patients, is endeavoring to raise $25,000 to purchase a suitable site on which a permanent hospital building may be erected.

**Hodgen Memorial Meeting.**—At the meeting held under the auspices of the St. Louis Medical Society of Missouri, April 27, to commemorate the twenty-fifth anniversary of the death of Dr. John T. Hodgen, Drs. John C. Morfit, president of the society, and Warren B. Outten, chairman of the committee of arrangements, jointly presided. A life-size oil painting of Dr. Hodgen occupied a conspicuous place on the stage. Dr. Joseph M. Mathews, Louisville, who spoke on "Dr. Hodgen as a National and International Figure in Medicine," eloquently compared him to Lincoln and Daniel Drake, and asked the question whether the spirit of self-sacrifice, of the public weal, of intense thought and application which distinguished Dr. Hodgen, fills the lives of the practitioners of to-day and whether men have not now become so imbued with the spirit of the present times that they allow other things than sturdy accomplishments, honest motives and high principles to actuate them. He advocated that a tablet to Dr. Hodgen's memory be placed in the "Hall of Fame." Dr. Warren B. Outten, St. Louis, who spoke on "The Educational Influence of Dr. Hodgen in the Mississippi Valley," told how his students reverenced him, and how marked his influence had been on the profession of the West. Dr. Charles H. Wallace, St. Joseph, president of the Missouri State Medical Association, who bore witness to "The Debt of Missouri to His Example and Memory," spoke of the benefit to the human race of Dr. Hodgen's skill and learning. Hodgen, he said, was one of the great men of the age. Hon. Charles Nagel, St. Louis, paid an eloquent tribute to "His Worth as a Citizen." Rarely, he said, were such forces of mind and fundamental principles of character united in one man. He was a universal man, not too great for any one profession, but great enough for any one to make it redound to the benefit of the human race. He was essentially an American citizen, and in everything he did there was the all-pervading influence of the citizen and the man. Dr. Henry C. Fairbrother, East St. Louis, Ill., to whom was assigned "His Power and Influence as a Teacher Over His Classes," referred to Dr. Hodgen as the George Washington of the medical profession. He was beloved and revereneed by his students, each of whom felt that in him his professor took an especial and personal interest. Dr. Le Grand Atwood, Ferguson, Mo., who was a fellow-student and roommate of Dr. Hodgen, spoke on "His Student and Social Life," and narrated many reminiscences of the student life of the great surgeon. He was a physical and mental giant and exhibited all the virtues and excellencies that go to make up the real man. Dr. Charles D. Stevens, St. Louis, secretary of the committee of arrangements, then read letters of regret from physicians who were unable to be present, but added their tribute to the memory of Dr. Hodgen.

## NEW YORK.

**To Defeat Optometry Bill.**—The Medical Society of the County of New York has ent a letter to its members asking them to use personal influence with their representatives in order to secure the defeat of a bill regulating the practice of optometry which makes partial doctors of opticians. This bill passed the Assembly April 23. It would create a new profession, and make an entering wedge for the making of specialists of men who are not qualified by education or training for the work which the bill authorizes them to do. If this bill became a law other bills might follow creating separate professions for makers of orthopedic apparatus, trusses, etc., and for vibrationists and others, so that the profession would consist of divisions of practitioners imperfectly educated and trained and licensed to practice under separate laws, which would not be advantageous to the public or to the medical profession.

### New York City.

**Personal.**—Dr. Marcus E. Peterson, Brooklyn, was thrown from his carriage and seriously bruised in a collision with an automobile, April 18.——Dr. Joseph F. Todd, Brooklyn, has been appointed attending gynecologist to St. Peter's Hospital, Brooklyn.——Dr. Arthur R. Eddy, Manhattan, has been appointed assistant surgeon N. G., N. Y., and assigned to the Seventy-first Infantry.

**Many Smoke Protests.**—The Anti-Smoke League obtained a conviction against the New York Edison Company on April 22, and since that time numerous complaints have been pouring in from all over the city calling attention to the violation of the sanitary code in the use of soft coal. The disposition of small offenders is to adopt means of preventing smoke where soft coal is used, and it is possible to adjust furnaces to such methods.

**New Clinical Society.**—The medical staff of the New York Throat, Nose and Lung Hospital has organized a society known as the Clinical Society of the Hospital. Members and ex-members of the staff are eligible to membership. The officers are as follows: President, Dr. Elmer A. Miller; vice-president, Dr. Sam Goldstein; secretary, Dr. Charles F. Walter; treasurer, Dr. M. C. Tracy; hospital committee, Drs. Stephen D. Harrison, James J. Concannon and M. I. Schamberg, and scientific committee, Drs. Samuel J. Kopetzky, F. R. Kemple and John A. MacIsaac.

**The Mosquito Doomed.**—Dr. Alvah H. Doty, health officer of the Port of New York, says that he will make good his promise of five or six years ago that at this time Staten Island would be practically free from the salt-water mosquito. He began the work in 1900. The only way in which the work could be done was by draining. At first much opposition was encountered, but the system of drainage has resulted in reclaiming much land that was formerly valueless. Dr. Doty intends to turn his attention to the study of the different varieties of mosquitoes of New York and vicinity, and expects to find that much disease is transmitted through this agency.

**Aid for Hospitals.**—The funds raised by the Saturday Hospital and Sunday Association amounted to $103,110, of which $1,555 was derived from the offer of Mr. and Mrs. James Speyer to duplicate all gifts after $100,000 had been raised. The allotment was made to hospitals on the basis of free work done. The Montefiore Home and Hospital and Mount Sinai Hospital received the largest awards, $8,400 each. St. Luke's Hospital received $4,647; Roosevelt Hospital, $4,427; German Hospital, $4,119; Lebanon Hospital, $4,074; Hospital for the Ruptured and Crippled, $3,673; Postgraduate Hospital, $3,504; New York Infant Hospital, $3,499; Society for Lying-in, $3,295; Orthopedic Dispensary and Hospital, $3,104; St. Mary's Free Hospital for Children, $2,942, and others received lesser amounts.——The Presbyterian Hospital will receive between $120,000 and $150,000 by the will of the late Peter Cumming.

## NORTH CAROLINA.

**College Commencement.**—The fifteenth annual commencement of the North Carolina Medical College, Davidson, was held at Charlotte, April 16, when a class of 14 was graduated. The address to the graduates was given by Hon. Charles P.

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Pressly, Augusta, Ga. The new building of the college, which was erected at a cost of $30,000, was opened to the public on this occasion for the first time.

**Personal.**—Dr. Thomas Stringfield, Waynesville, has been appointed inspector-general of the North Carolina National Guard, with the rank of colonel.——Dr. Charles B. Woodley, Kinston, has been elected supreme ruler of the Fraternal Mystic Circle.——Dr. Gaillard S. Tennent, Asheville, has gone to Baltimore for six weeks' postgraduate work.——Dr. William H. Cobb, Goldsboro, is taking postgraduate work in the University of Pennsylvania laboratories, Philadelphia.——Dr. Henry F. Long, Statesville, is building an addition to the Long Sanatorium to accommodate ten additional patients.

## OHIO.

**Newspaper Notices.**—The Marion County Medical Society, at its last meeting, passed resolutions forbidding the members of the society to give items to newspapers regarding cases in which they are interested.

**Graduate Course.**—A course of lectures, laboratory work and clinics for graduates at the Medical College of Ohio, Medical Department of the University of Cincinnati, is announced to begin April 15 and to continue until June 1.

**Elections.**—At the semi-annual election of officers of the Association of Assistant Physicians of Ohio State Hospitals, Dr. Earl E. Garver, Columbus, was elected president; Dr. Frank Day Ferneau, Toledo, vice-president, and Dr. Isabelle A. Bradley, Columbus, secretary.——The Second Councilor District Medical Society, at its annual meeting, held in Springfield, April 11, elected the following officers: Dr. J. Robert Caywood, Piqua, president; the presidents of the various constituent societies, vice-presidents; Dr. Asa C. Messenger, Xenia, secretary, and Dr. Webster S. Smith, Dayton, treasurer.

## PENNSYLVANIA.

**Spotted Fever in Pittsburg.**—Anxiety is felt in Pittsburg on account of the prevalence of cerebrospinal meningitis. During March and April 17 cases occurred, with 11 deaths.

**Personal.**—Dr. Charles D. Schaeffer has been elected mayor of Allentown, vice Dr. Alfred J. Yost, deceased.——Dr. Gaetano Conti, Pittsburg, is to be the guest of honor at a banquet given by the Italians of the city, May 8.

### Philadelphia.

**Personal.**—Dr. DeForest Willard, who has been ill for a year, has returned from the South greatly improved in health and has resumed professional work.——Dr. John B. Deaver has been appointed consulting surgeon to the Philadelphia Hospital, vice Dr. John H. Brinton, deceased.——Dr. George M. Piersoll, chief resident physician at the University Hospital, was given a banquet by the physicians and nurses of the hospital at which he was presented with a silver loving-cup. He is soon to go abroad.

## RHODE ISLAND.

**Gives Hospital.**—Mrs. Ann Crawford Allen Brown has presented the estate of her late husband at Quidnesset, to the Rhode Island Hospital, to be used as a hospital for children afflicted with tuberculosis of bones. The gift is in memory of her father, the late Crawford Allen, and comprises a large brick residence and 100 acres of land.

**Tuberculosis Exhibit.**—The traveling tuberculosis exhibit was opened in Providence during the week of March 18. It included both the exhibition of the National Association for the Study and Prevention of Tuberculosis and that of the Boston Association for the Relief and Control of Tuberculosis, together with exhibits from Rhode Island institutions.

**Personal.**—Dr. Maude A. E. Kenney, Providence, was brutally assaulted in her father's residence by a burglar, recently.——Dr. Henry J. Hoye, Providence, was seriously injured by the fall of a counterweight, used to grip cars on the College Hill incline. His face and hands were badly lacerated. ——Dr. E. T. Hoffman, formerly interne at the Good Samaritan Hospital, Providence, has been appointed receiving physician at the City Hospital, Cleveland, Ohio.

## GENERAL.

**Delegates to Red Cross Meeting.**—Surgeon-General Robert M. O'Reilly, U. S. Army, and Medical Director John C. Wies, U. S. Navy, have been selected as delegates from the American Red Cross Society to the International Red Cross meeting in London.

## CANADA.

**Another Fire at McGill University.**—A second fire has occurred at this university within a few weeks. This time the fine four-story building of the medical faculty has been totally destroyed. Dr. F. J. Shepherd, professor of anatomy, has lost his anatomic museum; Dr. Ruttan, professor of chemistry, all his private library which he kept in the building; Dr. J. George Adami, professor of pathology, nearly all his pathologic museum and his private library which he kept in the building for the benefit of the students. The latest report states that he managed to save the manuscript of a new work on pathology on which he has been working for many years. Among the many fine pathologic specimens which had been collected by McGill none was finer than the collection of calculi; in fact, it was said to be the finest in the world. The Osler collection was also entirely destroyed. These specimens Dr. Osler collected while he was pathologist to the Montreal General Hospital. The main building of the Medical Faculty of McGill was erected in 1873. Large additions and alterations were made in 1885 and again in 1893. It was at this time that Lord Strathcona endowed the chairs of pathology and public health with $100,000. Six years after he again contributed $100,000 for the development and extension of the museums, laboratories and library. The latter contained 24,000 volumes and was completely destroyed. This is the seventy-fifth session of McGill, and the students enrolled in the medical department numbered over 400. Coming so quickly on the destruction of the engineering building, incendiarism is suspected and an investigation is proceeding.

## FOREIGN.

**Politzer's Retirement.**—At the end of the summer term, 1907, Prof. A. Politzer will have arrived at the age beyond which, according to the laws of Austria, he may not retain his chair at the University of Vienna. He will therefore resign this position, as well as that of the head of the Vienna ear clinic. The lectures which he has delivered for the past forty-six years will cease. A formal celebration had been planned, but Professor Politzer requested that in view of the fact that a number of deaths had occurred in his immediate family, no public celebration take place. Dr. Hugo Frey, Vienna, informs us that it has been decided to present to Professor Politzer a gold medal bearing his portrait made by a renowned sculptor. Copies of this medal, some in silver and others in bronze, will also be struck off to serve as souvenirs. These will be disposed of at $5 and $2.50 each, respectively, and the names and addresses of all subscribers will be presented with the gold medal and address to Professor Politzer. Dr. D. Kaufmann, Vienna, vi, Mariahilferstrasse 37, will receive all communications and remittances. Any surplus there may be will be put at Professor Politzer's disposal as a fund to further some scientific object.

**Thirty-sixth Congress of German Society for Surgery.**—As mentioned elsewhere, this congress was held at Berlin, April 3-6, and Rehn opened the proceedings with a summary of what has been accomplished with surgery of the heart since he first attempted it in 1897. He does not approve of cutting a large flap for access, and stated that by temporary compression of the veins with the fingers the suture can be done on the practically empty heart. Riedel and Kümmell reported that exposure of the heart and direct massage had not proved successful in their hands in resuscitating patients in "chloroform death." The momentary effect was remarkable, but actual life was not restored. Küttner related the clinical cure of a patient with leukemic wandering spleen treated by splenectomy, and Bakes an interesting case of hour-glass stomach treated by gastroenterostomy in each half of the stomach, the implanted loops uniting as they entered the intestine below. The second session was devoted mainly to operative treatment of pulmonary affections. A number of surgeons described favorable experiences with surgery of the lungs; some spoke of experimental research with the Sauerbruch under-pressure cabinet. Lenhartz reported 85 cases of gangrene of the lung in which he had operated. In 53 cases the patients were cured, as also in 4 out of 5 cases of abscess. In 26 cases of carcinoma of the lung—diagnosed mainly by the presence of fat granules in the sputa—he operated in 4 instances, and one of the patients is clinically cured for the time being. Körte stated that he had lost 3 patients in collapse in operating on the lungs. Garré recommends displacement of the lung and pneumolysis to allow the lung to retract and bronchiectasia to subside. The speakers did not seem to consider the Sauerbruch air cabinet indispensable for operating on the lungs. Küttner and Wendel attempted to operate on the esophagus under over-pressure, but both patients succumbed. Kümmell reported 4 deaths in 19 prostatectomies, and Völkers a mortality of 9.7 per cent. in 32 perineal prostatectomies, and 2 deaths in 7 transvesical operations. Rumpel called attention to the psychic disturbances some-

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times observed after removal of the entire prostate, in many cases leading to suicide. For these reasons Rovsing avoids prostatectomy whenever possible, and prefers cystostomy with a special catheter left permanently in place. The discussion seemed to show that the transvesical route is coming to be regarded as the easiest and least dangerous. Rovsing reported successful removal of the entire bladder with implantation of the uretera in the groin with receptacles worn to collect the urine, which have proved very satisfactory. Jacoby exhibited a stereoscope with which the interior of the bladder can be inspected. Hoffmann described what he calls "suprahyoid pharyngotomy," a transverse incision for access to a tumor in the nasopharynx. Haberer reported implantation of kidney tissue, but without definite results. Bockenheimer stated that he has noticed that wounds infected with tetanus did not lead to tetanus if they were treated with a salve and Peruvian balsam. He advocates, therefore, the application of antitetanus serum directly to the wound in the form of a salve. Our German and French exchanges for April contain more or less detailed accounts of the congress and of the orthopedic and Roentgen congresses just preceding. They mention the presence of Dr. Keen as guest of honor. The official transactions of the surgical congress are published in a special issue of the *Centrbl. f. Chirurgie*, generally in July.

## Pharmacology

### ANASARCIN AND ANEDEMIN.

**Reports of the Council on Pharmacy and Chemistry and Comments Thereon.**

The following reports were submitted to the Council by the subcommittee to which these articles were assigned:

#### ANASARCIN.

*To the Council on Pharmacy and Chemistry:*—Your subcommittee to whom Anasarcin (Anasarcin Chemical Co., Winchester, Tenn.) was assigned, herewith submits its report:

This remedy is offered in two forms: "Anasarcin Tablets," a pretended combination of the active principles of oxydendron arboreum, sambucus canadensis, and urginea scilla; and "Anasarcin Elixir," said to contain the active principles of oxydendron, sambucus, hepatica and potassium nitrate. The advertisements of these articles conflict with the rules of the Council as follows:

With Rules 1 and 2: The composition of these articles is kept secret, in that the proportion of the ingredients is not furnished. The statement that it contains the "active principles" is misleading, since these are for the most part unknown.

With Rule 6: The description of the pharmacologic action of Anasarcin agrees practically with that of squill. No material part of its effects can be attributed to the other ingredients. Nevertheless, the advertisement studiously cultivates the impression that Anasarcin has no relation whatever to the digitalis group in which scilla is commonly placed. The claims are therefore misleading. The claim of its infinite superiority to digitalis, the claims that it cures neurasthenia, eliminates uric acid in rheumatism, and is useful in obesity, cystitis, lumbago and eclampsia, dyspepsia and asthma, and that it works wonders in exophthalmic goiter, appear exaggerated or false.

The recommendation of its indiscriminate use in nephritis, for lowering the blood pressure and the statement (contradicted in the firm's own literature) that it is not depressing are actually dangerous.

It is recommended that the articles be refused recognition, and that the report, with explanations, be published.

#### ANEDEMIN.

*To the Council:*—Your subcommittee to whom Anedemin (Anedemin Chemical Co., Winchester, Tenn.) was assigned herewith submits its report:

Anedemin is an evident imitation of Anasarcin. It is marketed as tablets, said to contain the isolated active principles of strophanthus, apocynum, squill and sambucus—chemically combined. The quantities are not stated. The therapeutic claims are copied almost literally from the Anasarcin circulars and are equally false. Anedemin, therefore, conflicts with Rules 1, 5, 6 and 7.

It is recommended that this report be published with comments.

The reports were adopted by the Council and are herewith published.

W. A. PUCKNER, Secretary.

### REMARKS ON ANASARCIN AND ANEDEMIN.

#### ANASARCIN.

This wonderful remedy, Anasarcin, has already been exposed in these columns (vol. xlvi, p. 288), but it deserves additional mention, as it teaches several important lessons of general application. It is a typical example of the revival, under a new name and a thin disguise, of an old, time-worn article, squill, the use of which in dropsy has been practically discarded, presumably because experience has demonstrated its general inferiority to other drugs. Anasarcin further illustrates the dangers involved in the use of semi-secret nostrums. It also shows how a short experience with a widely advertised but little understood drug is apt to lead to conclusions which more extensive experience demonstrates to be entirely fallacious.

The first lesson is, that formulas are not always what they seem. A hasty glance at the formula of Anasarcin tablets, the basis of the Anasarcin dropsy cure, creates the impression that it is a non-secret remedy; for it is said to represent a combination of the active principles of oxydendron, sambucus and scilla. As a matter of fact, it is a secret nostrum of the insidious kind. A formula which omits the quantities of its potent ingredients means very little. Further than this, we do not hesitate to charge that the claimed composition is a deliberate deception. The circulars emphasize the claim that Anasarcin consists of the *isolated principles*, and not of the crude drugs. Now, the isolated active principles of cambucus and oxydendron are not on the market, for the good and sufficient reason that no active principles have ever been isolated. Are we to believe that the Anasarcin Company has surpassed the accredited chemists and has discovered such principles and is isolating them? We shall have more to say on this subject presently; but any one in the least familiar with the difficulties attending the isolation of organic principles knows such an idea to be preposterous. Indeed, it is absolutely incompatible with the exhibition of ignorance of the elementary facts of pharmaceutical chemistry which is given by these people when they call the active principles of digitalis and squill "alkaloids."

It is an axiom that the effects of a mixture can only be understood if the actions of its components are known. So far as we know, the physiologic effects of oxydendron and sambucus have never been scientifically investigated, for the simple reason that they are too slight and indefinite to promise results. Both are credited with some slight, obscure diuretic action. Oxydendron, the sour wood or sorrel tree, is a small tree of the heath family, the acid leaves of which are said to be chewed by hunters for their pleasant taste and for the relief of thirst. Sambucus is the common elder. It is most unlikely that these two innocuous substances should play any part in the claimed powerful effect of Anasarcin; they are evidently put in the formula, we do not say in the preparation, to obscure the fact that Anasarcin is composed principally of squill. That this is so can be gathered unmistakably from a study of the pharmacologic action of Anasarcin as described by its promoters:

> Acting primarily on the heart and arterial systems through the nerve ganglia, a natural physiologic balance is established between the arterial and venous systems, whereby effusions . . . are eliminated. . . . Coincident with this action there is a noteworthy *slowing* of the pulse. . . . If the remedy is pushed, can be brought down to 20 or 30 beats per minute. . . . Its physiological action is to stimulate the cardiac motor-ganglia through the cardiac plexus of the sympathetic system and at the same time exert an inhibitory influence upon the cardiac fibers of the pneumogastric, thereby dilating the arterioles, slowing the heart's action, and increasing the force of the systole. . . . The prolonged diastole allows the ventricle time to completely fill, and the more forcible contraction causes the mitral valve to close more thoroughly and at the same time increases pressure in the coronary arteries, serving thereby the double purpose of relieving pulmonary engorgement and increasing heart nutrition.
>
> Anasarcin will nauseate some persons.

To appreciate fully the meaning of this description of the actions of Anasarcin, it should be compared with the effects of the digitalis group, to which squill belongs. The following account is quoted literally from a recent Text-Book of Pharmacology (Sollmann):

The phenomena of the therapeutic stage of digitalis action are said to be:

1. Slowing of the heart, with systole and diastole both lengthened.
2. Increased strength of beat, leading to greater efficiency of the individual contractions, and to an increase in the total efficiency. . . .
3. A tendency to the systolic phase.
4. A rise of blood pressure, due mainly to the increased action of the heart, but partly also to a vasoconstriction. . . .

Abnormal dilation of the heart is lessened and irregularities tend to disappear.

The therapeutic effects are explained, in part, as follows:

A larger amount of blood will be thrown into the aorta and coronary circulation. The first effect will be an improved condition of the heart. . . . The tonic action . . . narrows the ring of the valves, brings them closer together, narrows the orifice. . . . The venous congestion will tend to be relieved. This relief will fail in the first place on the lungs. . . . The lowering of the venous pressure will tend to cause absorption of the effusions. . . .

The nauseant action of squill, which is alluded to in connection with Anasarcin, is too well known to require more than a mention.

In brief, then, it appears from the statements of the Anasarcin Company that the action of the remedy is that of squill and that the other ingredients are a mere blind. It is, of course, well known that squill can be used as a substitute for digitalis in cardiac dropsy, although it is generally considered very inferior to the latter drug. Rose Bradford, for instance, states: "Squill is not used to any extent in the treatment of cardiac disease and cardiac dropsy, digitalis being a far more efficient and less toxic substance." However, it has been frequently observed that digitalis occasionally fails, and it may then be replaced successfully by another member of the group. At all events, it is very likely that squill is a fairly efficient substitute for digitalis, especially when it is supplemented by a very free course of Epsom salts and by potassium nitrate (the active ingredient of Anasarcin Elixir), both of which are stated to be essential adjuvants to the Anasarcin (or squill) tablets. There can be no objection to the use of squill when it is indicated; but any one who wishes to use it should do so with his eyes open, knowing what substance he is using and how much (which he does not in Anasarcin); knowing also that it has the same indications and limitations as digitalis. He should not be misled by such statements as the following:

"Does what dropsy medicaments have hitherto failed to accomplish."

"Superior to digitalis, strophanthus, scoparius, squills, acetate of potash and the hydragogue catharties all put together."

"The only known relief" (how modest!) "and permanent cure of dropsies."

"Unrivaled heart tonic." "The most powerful agent known."

Any one wishing to use squill should take the trouble to acquaint himself with the results obtained by competent and independent observers, and not rely on it in eclampsia, septicemia, "vices of civilization," all forms of neurasthenia, as "an active eliminator of uric acid in rheumatism," in hepatic cirrhosis, dyspepsia, asthma, obesity, cystitis (!), lumbago, exophthalmic goiter, etc.

He should also learn the contraindications to the use of squill, deducible from the fact that it causes vasoconstriction and raises the blood pressure (prohibiting its use in Bright's disease and arteriosclerosis), and that it produces marked gastric irritation, consequently nausea and depression, that it is a very toxic agent, and that the dangers of cumulative action must be borne in mind. In respect to these the advertisements of the Anasarcin people are little short of criminal, for these state:

"Safe in administration." "Non-toxic as ordinarily administered." "Will nauseate some persons," but "the reaction from the temporary depression is prompt." "In Bright's disease, both the interstitial and parenchymatous forms of nephritis, acute or chronic, no remedy . . . to equal it in efficacy." "Without increasing the debility of the patient or interfering with nutrition by producing loss of appetite." "This treatment is to be continued without cessation until all symptoms of dropsy have disappeared."

Physicians who are inclined to disregard this warning, and who follow the advice of the Anasarcin people, should remember that their patients—or their friends—will put the blame for the results, which are bound to follow sooner or later, on the prescribers, and not on the deceptive advertisements of the Anasarcin Chemical Company.

There is another little matter which throws an illuminating side-light on the Anasarcin Company. They take every occasion to say that Anasarcin is "not offered to the laity," "never sold to the laity," etc.; but witness the following, which was found in the *Retail Druggist* of May, 1906, p. 179. The italics are ours:

CURE FOR DROPSY.

As every druggist knows, dropsy has been one of the incurable diseases when caused either from heart, liver or kidney trouble. *A pharmacist* in Winchester, Tenn., *has worked out a remedy* called Anasarcin, which he is exploiting to the physicians, and his remedy is showing itself as possessing great merit. Several hopeless cases have been treated as a last resort by Anasarcin and in a very short time the patient has shown marked improvement and has effected permanent cures.

The result of the cases as handled by the physician with the aid of Anasarcin has been so easily and quickly cured that physicians of Tennessee and the southern states are high in their praises of the remedy. The company which now manufactures and sells it is known as the Anasarcin Chemical Co., of Winchester, Tenn. *Any druggist who knows of a case of dropsy would be conferring a favor on the patient and mankind in general by telling the party* or his physician *of the southern pharmacist*, and we have no doubt but what a prompt relief and permanent cure would be affected. [Probably means effected.—ED.]

(*To be continued.*)

## Correspondence

### The German Surgical Congress.

BERLIN, April 6, 1907.

*To the Editor:*—The thirty-sixth annual meeting of the German Surgical Society has just come to an end. It has occurred to me that it might be of interest to some of your readers to learn something of its management. In many respects it is a decided improvement on the conduct of similar meetings with us, and we would do well to imitate them. Of the scientific proceedings I shall say nothing, as these you will get from others.

The society has over 1,600 members and 76 new ones were added this year. It is, therefore, the largest, and I think it is fair to say also the most important surgical society in the world. Over 800 were in attendance. The meetings are always held in Easter week in the Langenbeckhaus, in Berlin. As the hall seats only 500 to 600, cards of admission have to be shown. Even the aisles were well filled. Strangers are admitted to a rather narrow gallery on three sides of the hall.

The arrangement of the hall is excellent. It is nearly square, the seats rising abruptly as in an amphitheater, so that all can see and hear well. It is lighted wholly by a large skylight, and by electricity at night. The president, flanked by the other officers, sits on a long, raised platform and back of him is a higher platform or "tribune" to which each speaker ascends. Back of the speaker is a blackboard with a wainscoted wall on each side on which charts, pictures, etc., were fastened by the thumb-tacks used by artists. Above this wainscoting and on the side walls were hung a number of portraits. In the middle was Langenbeck and, as if to show that surgery includes pathology and the surgical specialties, v. Graefe's portrait hung on his right and Virchow's on his left. Among the others were Billroth, Czerny, v. Esmarch, Thiersch and other Germans, while Lister, Paget, Spencer Wells and Ollier represented the international character of our science. von Bergmann's portrait was appropriately draped in crêpe. The sorrow for his so recent death was universally expressed, and during the president's address, when he had spoken of their loss, the entire audience rose for a moment to express their homage and respect. Few men have wielded a wider influence, especially by his charming personality and his handsome presence. It would be hard to find four finer looking men than Langenbeck, Bergmann, Esmarch and Czerny.

The congress lasts four days instead of three, as is usual with us, and the hall was as full on the last day as on the first. It is a series of serious meetings, with surgery as the important business to be transacted. They meet from 9 to 1 and 2 to 4, beginning and ending promptly. No time is lost at lunch, as this is served in the lobby at a most reasonable price. No social functions interfere with the scientific business of the day. Only in the evening are there any dinners. Attention to the business of the meeting is essential, for though the rule of the society allows only 70 papers, there were 100 on the program this year, and in addition to these there were a few discussions. No wonder that so portly a volume of Transactions is issued every year. There were some unavoidable absentees, and so probably only 80 to 85 papers were actually presented. Moreover, only a few of these were read, and those not usually *in extenso*. Fifteen minutes is the time allowed for papers and five for demonstrations and discussions, though the rule was not very strictly adhered to. If a speaker was dull and uninteresting (of which there were only four or five, I think), the audience did not hesitate to give him notice to stop by slight but very perceptible shuffling and stamping of feet. There was no applause, not even at the end of the president's address. The only expressions of approval were half-murmured "bravos" on a few occasions.

Not only was the blackboard freely used, but there were generally drawings, models, specimens, photographs, skiagraphs and many patients shown, which added greatly to the interest and the comprehension of the audience. While not a few of the papers were by younger men, yet the German deference to age, distinction and official position was much in evidence. The "Ausschuss" members make up a sort of large Executive Committee, who transact most of the business. They are generally among the older and more distinguished men. They are admitted by a separate door and occupy the front seats, and are prominent in the proceedings.

Even the treasurer's report was brief, and a still shorter summary was placed on the blackboard for every one to see.

Readers of papers generally read only abstracts, but publish the papers in full. Most of them instead of reading gave *extempore* the substance of their communications. The speaking, even in debate, was excellent, rarely with hesitation or halting, and the German was fluent and well pronounced. The few who read from manuscript generally made the mistake, so common with us, of reading very closely. A reader should know his manuscript so well that for at least two-thirds or even four-fifths of the time he can look into the eyes of his audience. Only so can he hold their strict attention. A close and especially a droning reader puts them to sleep.

There were few discussions, but these were admirable. Those who took part were well chosen and had evidently prepared themselves. They added something to the subject discussed. *Per contra* there was very little spontaneous debate, that is, debate properly so called; little of quick expert fencing, few sparks from the clashing of firm but differing views, little of that ready repartee which is often seen with us. Most of the papers were not even submitted for discussion. When one was held it was generally on a group of allied papers. Indeed, there was no time for more.

Professor Riedel of Jena was an admirable presiding officer, with a clear voice, clean-cut enunciation and a fund of humor which lightened most agreeably the sometimes overserious proceedings. Never was an audience more responsive. They "caught on" instantly.

Professor Riedel is succeeded by v. Eiselsberg of Vienna, a most excellent choice.

In one respect we certainly should institute a reform—our long-drawn-out dinners. Rarely do we get away till 12 or 1 o'clock, and I am sure that no one who was present at the British Medical Association dinner at Montreal in 1897 will forget his weary wending to his hotel toward 3 a. m. Here the single official social function was the dinner on Thursday evening. The invitation named 5:30 p. m. as the hour. We sat down at 6. The dinner consisted of only six courses, besides cheese, fruit and coffee. The speeches began after the first course, and while they were being made the waiters waited. Professor Riedel, of course, gave as the first toast "The Kaiser." He was followed by König, Küster, Czerny, v. Eiselsberg and Rovsing of Copenhagen. The president introduced no one. Each rose, apparently spontaneously, called attention by klinking his glass, spoke for three to five minutes, and after the three "Hochs," the next course was served. By 8:30 we broke up into little groups, and many went home, and by 9 o'clock—when we would be only at the beginning—nearly everybody had gone. One private dinner was at 5:30, the others at 6:30 p. m. If I can persuade American medical men to adopt such a sensible procedure, I shall not have written in vain. I can not see that there is any real obstacle to prevent such a genuine and welcome reform.

Most of the leading men were here. In addition to those I have mentioned there were Rehn, Lauenstein, Helferich, Gluck, Garrè, Lenhart, Körte, Bardenheuer, Kümmell, Rydygier, Kausch, Krause, Mr. Arthur E. Barker of London, and many others. Unfortunately, Trendelenburg, Kocher, Bier and some others were unable to come.

The relic of medieval barbarism, the deformities resulting from scars received in student duels, I thought less in evidence than in former visits to Germany. Such scars only make handsome men ugly and ugly men *noch hässlicher*. In a country so highly developed intellectually, it is a marvel that such a custom can persist at all. If my observation is correct, it would seem that it is dying out—a consummation devoutly to be wished. Whether I am right in this or not, I am surely right when I say that nowhere will an American surgeon receive a heartier welcome than from his German colleagues, and nowhere will he be apt to learn more.

W. W. KEEN.

P. S.—Just as I finished this letter Dr. James H. Honan called to invite me to a meeting of the "Anglo-American Medical Association," which was founded by him and of which he is still president. Its headquarters are in Rothacker's Buchhandlung, 105 B Friedrichstrasse. Every Saturday night they dine at 7:30 in Room No. 1, Heidelberg Restaurant, in the same building as the Central Hotel, opposite the Friedrichstrasse station and only five minutes' walk from the Langenbeckhaus. At 8:30 they have a lecture, or informal talk, by a German professor or docent. This evening's lecture was by Schleich—him of the "fluid"—and was excellent. The association numbers usually from sixty to eighty. The entrance fee is only $1. They are doing an admirable work in helping American students in selecting their courses of study and giving information and help in every possible way. A similar Anglo-American club exists in Vienna, with its headquarters at the Café Polyklinik, opposite the Allgemeines Krankenhaus.

Not only should every American student in these cities join these clubs, but the older men should visit them and encourage our younger hard-working colleagues. If I may judge by my experience to-night, such visits are most highly appreciated.

W. W. K.

## *Miscellany*

### The "Lancet" on the Work of the Council on Pharmacy and Chemistry.

Under the caption "The American Medical Association and Proprietary Remedies," the *Lancet* (April 20, 1907), has this to say:

The Council on Pharmacy and Chemistry of the American Medical Association is making excellent progress in its campaign for the reform of the trade in proprietary medicines. For over two years a body of experts has been systematically collecting information concerning proprietary medicines sold in the United States, with a view to separating those which comply with a certain ethical standard from those which do not.

The Association has just issued two publications which indicate the results of this investigation up to the present time. One of these booklets contains monographs on a number of unofficial and proprietary drugs tentatively approved by the Council on Pharmacy and Chemistry. This is to form the basis of a volume to be called "New and Non-official Remedies." The other booklet contains a number of reports by committees and analysts on proprietary medicines to which recognition in that volume is to be refused. No article advertised to the public is accepted for inclusion in "New and Non-Official Remedies," nor is a recommendation for the treatment of any particular disease permitted on the label or on an accompanying circular. A false statement by the manufacturer as to the origin, source, or therapeutic value of this drug prevents recognition, and the Council insists that in the case of every compound the names and proportions of all active medicinal ingredients and of alcohol, together with the identity of any preservative used, shall be honestly disclosed. In the case of chemical substances, structural formulas are also required. The manufacturer's statements are checked when necessary by analysis in the laboratory. If the trade name of an article be insufficiently descriptive the Council reserves the right to include in "New and Non-Official Remedies" a descriptive title as well as the trade name. The Council is careful to state that even when all these conditions have been duly complied with, acceptance does not connote a recommendation but merely implies that so far as is known the fixed ethical standard has been reached. The monographs in the booklet thus tentatively approved follow to some extent the model set by pharmacopeias. As nearly all the remedies included are the subject of proprietary rights, the trade name—whether this be registered trade-mark or not—forms the title of each monograph, a fact which will greatly benefit firms owning any kind of proprietary interest in the names of remedies. Following this are synonyms, then the description of the remedy, its method of preparation, distinctive characters and tests, actions and uses, and dosage. Finally, the name of the manufacturer and the nature of his rights, whether arising through a patent or a trade-mark, are given.

The second of the two booklets issued by the American Medical Association contains, as has been stated, reports on certain proprietary articles which do not reach the ethical standard laid down by the Council on Pharmacy and Chemistry. Sometimes the report consists merely of quotations from advertising literature, the language of which is itself sufficient to explain to the medical profession why the articles referred to have not been acceptable. In one or two cases letters from irate manufacturers objecting to give away their trade secrets are printed. Analytical reports show that proprietary brands of "metabolized cod-liver oil" and "cod-liver oil cordial" contain no cod-liver oil at all. A preparation freely advertised both in the United States and in Great Britain as a "laxative salt of lithium" was found to consist almost wholly of sodium citrate and sodium sulphate. A number of proprietary powders and tablets were found to contain so large a proportion of acetanilid as to disentitle them to the recognition of the Association. A proprietary "coca wine" emerges unsuccessfully from the ordeal of analysis accompanied by a scrutiny of the advertisements of the wine. The committee believes that this wine is intended primarily to be a beverage, not a medicine. For one reason or another a considerable number of substances have been weighed in the balance and found wanting.

This authoritative separation of proprietary remedies into two distinct classes is a notable step in advance of previous attempts to deal with a growing difficulty and a grave evil. Many proprietary compounds and so-called synthetic drugs are articles which ought not to be prescribed by medical practitioners in any circumstances. The difficulty has been that the medical profession has had no satisfactory means of distinguishing between the worthless and the useful. For it is undoubtedly true that some remedies which are the subject of proprietary rights are valuable and almost necessary additions to the therapeutic agents at the service of physicians. However much we may object to the principle of private monopolies in things which are a public necessity, it would be too much to expect that a manufacturer who spends large sums of money on chemical and clinical research should dedicate to his trade competitors the advantages of the genuine discoveries of his employés. The American Medical Association has recognized this at the onset and has begun its work with conspicuous wisdom. For the future it contemplates the formation of a corps of medical consultants connected with large hospitals and also the establishment of a chemical and pharmaceutical laboratory in the Association's premises. Many more substances still have to be investigated, but from the work which has already been accomplished it may fairly be anticipated that the publication of "New and Non-Official Remedies" when completed will serve a most useful purpose. There will then no longer be any excuse for the prescribing by medical practitioners of discreditable proprietary medicines, or for the acceptance by newspaper proprietors of fraudulent advertisements in respect of such nostrums. If medical men, pharmaceutical chemists and druggists are willing to take active steps to educate public opinion in the matter of quack medicines, educative material in plenty will be supplied by the American Medical Association, whose action will only need their energetic support in order to confer a conspicuous benefit on the body politic.

## *Medical Economics*

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, CONTRACT PRACTICE, INSURANCE FEES, MEDICAL LEGISLATION, ETC.

### "What Fools These Doctors Be."

In the April number of the *Memphis Medical Monthly* appears an article with the above title by Dr. Buford of Memphis. The arguments he uses to establish the truth of his statement are many. The paper is too long to quote in full, but some of Dr. Buford's remarks are entitled to reproduction. He says: "Physicians are not diplomats, but they do more for the advancement and welfare of mankind than do all the statesmen combined. They are poor, yet they do more charity than all the philanthropists put together. They are not over-religious, but they practice more Christianity than do the clergy. They are not over-virtuous, but they are the custodians, often, of a woman's purity, and too often of her good name. They are the public servants, yet they carry more secrets in their innermost souls than ever were confessed to priests. The average doctor's influence is great in his community, yet he is the tool of every demagogue and politician."

As to the manner in which the profession has been duped by the proprietary medicine manufacturer, Dr. Buford, as might be expected, has very positive ideas. He says: "We are especially used by proprietary medicine men, and, like the patient ass, we meekly submit to their burdens and only occasionally kick when we are prodded too deep. They approach us with samples and bait us until we begin to prescribe their products, without knowing what they contain, and most of us don't care so long as they are palatable, give results and have names which are easy to write."

Dr. Buford carefully sets forth the way in which physicians are victimized by professional dead beats. He says: "If you fail to meet your obligation at the bank promptly, this becomes known to every banker in the city, and when you again stand in need of money, the banker will tell you that he is sorry, but he has no funds to loan. But when the patient who has worked Dr. S. as long as he can, rings up Dr. B. and tells him to come right up to his house, Dr. B. goes in all haste to see him and gives him his best efforts and is fed on promises as long as they will last, after which the patient sends for Dr. J. There are enough doctors in Memphis for him to have a new one every week or so for several years."

His conclusions are that physicians themselves are responsible for most of the charges in the indictment and that, if it is true that doctors are fools, they have no one to blame but themselves.

### Contract Practice and Township Trustees.

Dr. Albert S. Barnes, Botkins, Ohio, sends the following discussion:

"In view of the prevailing interest more recently manifested in our profession's material welfare, I take pleasure in reporting the following resolutions, which are self-explanatory: Under date of Jan. 29, 1907, these resolutions were signed by the seven physicians residing in the township. It is to be hoped that similar concerted action of the members of our profession throughout the country may 'hasten the day' when we shall state our terms to all corporations, private and public, with the same freedom that we do to our ordinary patients. When this shall have been accomplished, we shall be justly entitled to, and may hope to receive, due consideration."

WHEREAS, The trustees of Dinsmore Township, Shelby County, Ohio, have objected to paying regular fees for medical services rendered to paupers and have announced their intentions to "advertise for the lowest bidders" for this work; be it

*Resolved*, That we, the physicians of the said township whose names are hereunto annexed, disapprove this action of the trustees for the reasons, among others, that such action would, in many cases, curtail the liberty of the patient in his choice of a physician and so cannot subserve the best interests of the patient in his betterment or recovery; and, that such proposed action of the trustees would, if concurred in by us, contravene the Principles of Medical Ethics of the medical fraternity; and, be it further

*Resolved*, That we will not individually nor collectively bid in the township work, but that we will present bills for payment at the regular fees of the Shelby County Medical Society for any work done for the township's paupers.

"For the benefit of those who doubt the possibility of such action among the physicians of his own neighborhood, it may be proper to add that only three of the seven signing these resolutions are members of the county society, and that no greater harmony prevails here than in other sections. But we hope this action may be a step toward greater harmony and increased membership in the society, with all the professional betterment thus attainable. Surely an enlightened profession with as great demands for money as assail present-day physicians should be able to agree at least in the one point of fairly adequate 'pecuniary acknowledgment' from their patients."

### New York Law Not Responsible.

In a recent letter a correspondent states that several life insurance companies are circulating the report that all companies having home offices in New York state are prevented by the new insurance law recently adopted in that state from paying more than $3 for medical examinations for policies under $3,000, and that the responsibility for the reduction in life insurance examination fees rests with the New York legislature and not with the officers of the companies. This matter has already been discussed in THE JOURNAL, Dec. 8, 1906, but, as the statement is still being made by insurance promoters, we take this opportunity to call attention to the misleading nature of this claim. The New York law does not limit the amount paid for medical examinations. Several of the larger companies reduced their fees long before the New York law was passed.

### Education in Sexual Hygiene.

The Ottawa County (Mich.) Medical Society held a public meeting on April 11 for men, particularly college and high-school students and young men just entering business life. The topic was the prevalence of diseases incurred through immorality and the best methods for their prevention. The physician's side of the case was given by Dr. H. Kremers, whose paper was discussed by Dr. T. J. Huizinga. Local clergymen, prominent lawyers of the town, the president of the local college and the county and town superintendents of schools all took part in the discussion. The meeting was well attended, and it is felt that much good resulted. The secretary of the society reports that the meeting is largely the result of the visit of Dr. McCormack to Ottawa last October.

### Non-Repetatur.

In harmony with the local druggists' association, the Summit County (Ohio) Medical Society has taken action to prevent the refilling of prescriptions issued by its members without an order from the prescribing physician. A statement of the action of the society and an explanation of the reasons therefor and the relation to the health and well-being of the public were published in a local paper.

### McCormack in Iowa.

Reports received from Iowa, in which Dr. McCormack has spent the greater part of April, indicate that the meetings held in that state have been unequaled in interest and attendance. The engagements had been well advertised and thoroughly worked up among the physicians and the public. The newspapers, almost without exception, showed great interest in the work, printing lengthy notices and announcements of the meeting in advance and long reports of the lecture after the meeting. Details regarding the Iowa meetings will appear later.

## *Queries and Minor Notes*

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

### LITERATURE ON OPSONIC THERAPY.

MENOMINEE, MICH., April 17, 1907.

*To the Editor:*—Can you furnish me with a list of articles on the opsonic index and opsonins? H. A. VENNEMA.

ANSWER.—As others have asked similar questions, we give a list of recent literature. The following articles on the opsonic theory have appeared in THE JOURNAL A. M. A. during the last few months:

Phagocytosis and Opsonins, L. Hektoen, Chicago, THE JOURNAL, May 12, 1906, p. 1407.

Abstract of Sir Almroth E. Wright's address at the Boston Medical Library meeting, Nov. 3, 1906, p. 1905.

The Opsonic Index in Medicine, N. B. Potter, N. E. Ditman, and E. B. Bradley, New York City, Nov. 24 and Dec. 1, 1906.

The Opsonic Index in Typhoid Fever, C. P. Clark, Chicago, Dec. 29, 1906, p. 2159.

A Series of Medical and Surgical Affections Treated by Artificial Autoinoculation, A. P. Ohlmacher, Feb. 16, 1907, p. 571.

Study of the Opsonins, E. A. Knorr, Baltimore, April 13, 1907, p. 1255.

A Convenient Method of Obtaining Clump-Free Emulsion for Opsonic Work, J. E. Pottenger, Monrovia, Cal, April 13, 1907.

The Percentage Index Versus the Bacillary Index in the Estimation of the Opsonins, C. E. Simon, Baltimore, Jan. 12, 1907, p. 139.

The following articles have appeared in American, British and Canadian journals as indicated:

The Opsonic Theory and Its Practical Application to Medicine and Surgery, G. W. Ross, *Brit. Med. Jour.*, London, July 7, 1906; abstracted in THE JOURNAL A. M. A., Aug. 4, 1906, p. 390.

Observations on the Opsonic Index and the Antipneumococcal Power of the Blood in Pneumonia, H. E. Wolf, Chicago, *Jour. Infect. Dis.*, October, 1906; abstracted in THE JOURNAL, A. M. A., Nov. 24, 1906, p. 1766.

Opsonic Index of Tuberculosis Patients Undergoing Sanatorium Treatment, G. A. Crace-Calvert, *Brit. Med. Jour.*, July 7, 1906; abstracted in THE JOURNAL A. M. A., Aug. 4, 1906, p. 391.

Vaccine Therapy and Passive Hyperemia in Surgery, J. C. Hollister, Chicago, *Surgery, Gynecology and Obstetrics*, December, 1906.

Wright's Latest Opsonic and Bacterial Vaccine Work, G. B. Webb, Colorado Springs, *Colorado Medicine*, January, 1906; abstracted in THE JOURNAL A. M. A., Feb. 16, 1907, p. 647.

Opsonins and Their Utility in Practical Medicine, H. French, *Brit. Med. Jour.*, Feb. 2, 1907; abstracted in THE JOURNAL A. M. A., March 2, 1907, p. 836.

Value of Tuberculo-Opsonic Index in the Diagnosis of Strictly Localized Tuberculosis, W. R. M. Kellogg, Seattle, Wash., *Northwest Medicine*, Seattle, January, 1907; abstracted in THE JOURNAL A. M. A., Feb. 23, 1907, p. 734.

Study of Opsonins, C. E. Simon, R V Lamar and W. N. Bispham, *Jour. of Exper. Med.*, New York, December, 1906; abstracted in THE JOURNAL A. M. A., Feb. 2, 1907.

The Opsonic Theory, Sir A. E. Wright, London, *Canadian Practitioner*, November, 1906.

A Clinician's Observations of Opsonic Therapy, C. D. Aaron, Detroit, *N. Y. Med. Jour.*, Dec. 1, 1906.

Note on the Opsonic Index, B. Brooke, *Dublin Jour. Med. Sci.*, September, 1906.

Opsonic Factors, Their Estimation and Use in Therapeutics, R. E. French, *Practitioner*, London, July, 1906.

Effect of Bodily Exertion on the Opsonic Index of Healthy Persons. G. C. Ellett, *Brit. Med. Jour.*, July 21, 1906.

Opsonins and the Opsonic Index and Their Practical Value in Treatment of Disease, G. A. Crace-Calvert, *Lancet*, London, Feb. 2, 1907.

The Opsonic Index as a Guide for Therapeutic Inoculation, with Some Results of Treatment by Vaccines, T. P. Dunhill, *Intercolonial Med. Jour. of Australia*, Melbourne, November, 1906.

Combining Properties of Opsonins and Normal Serums, R. Muir and W. B. M. Martin, *Brit. Med. Jour.*, London, Dec. 22, 1906.

The Opsonins in Surgery, J. G. Mumford, Boston, *Boston Med. and Surg. Jour.*, March 28, 1907.

Opsonins and Bacterial Vaccines, G. W. Ross, Toronto, Ont., *Canada Lancet*, Toronto, January, 1907.

Opsonins and Immunity, J. L. Bunch, *Lancet*, London, March, 1907.

Directions for Determining the Opsonic Index of Blood, E. C. L. Miller, Detroit, *Therapeutic Gazette*, Detroit, March, 1907.

Value of Tuberculo-Opsonic Index in Diagnosis, E. T. Fraser, *Glasgow Med. Jour.*, March, 1907.

Review of Opsonins and Bacterial Vaccines, E. M. Houghton, Detroit, *Therapeutic Gazette*, Detroit, January, 1907.

Opsonins and Treatment of Bacterial Vaccines, J. L. Bunch, *Lancet*, London, Jan. 19, 1907.

Newer Facts Concerning Phagocytosis; the Opsonins, L. W. Famulener, Bloomington, Ind., *Central States Med. Monitor*, Indianapolis, January, 1907.

Opsonins, E. B. Bradley, New York City, *Physician and Surgeon*, Detroit, December, 1906.

## WHAT IS CRYOSCOPY?

WASHINGTON, D. C., April 26, 1907.

*To the Editor:*—In THE JOURNAL, April 20, 1907, on page 1349, second column and second line of last paragraph, appears the word "cryoscopy." I am unable to find this word in either of my three dictionaries, and would appreciate an explanation of the meaning of the word. C. C. A.

ANSWER.—The word cryoscopy comes from the Greek *kryos*, cold, frost, and *skopeo*, to see. As used in physics it means the determination of the freezing-point of a liquid. In medicine it has reference to the process of comparing the freezing-point of blood, urine, liquor amnii, effusions, etc., with that of distilled water. Cryoscopy of the blood is of value in determining the functional activity of the kidneys. Cryoscopy of the urine is of comparatively little value, in fact Sahli believes that the freezing point of a urine, free from sugar and proteid, may be estimated by multiplying the last two figures of the specific gravity, carried to the third decimal place, by .075 C. Its value is based on the principle that the freezing point of any liquid depends on the kind and amount of solids held in solution by that liquid. The lower the freezing point the greater the concentration. Definitions of this term are found in Gould's, Appleton's, and Dorland's medical dictionaries, and in the Standard dictionary and it has been frequently mentioned in THE JOURNAL during the last four or five years, as will be seen by referring to the index of the various volumes. Determination of the lowering of the freezing point of the urine in case of suspected kidney disease is now among the routine "functional tests" in some clinics and hospitals abroad. Some consider it important in determining the functional capacity of the other kidney in contemplating nephrectomy. The technic of cryoscopy was mentioned in THE JOURNAL, June 4, 1904, page 1518, and was described again May 26, 1906, page 1654, with accumulating evidence as to its diagnostic value.

## TREATMENT OF EARACHE.

CHICAGO, April 25, 1907.

*To the Editor:*—If Dr. Young (THE JOURNAL, April 20, page 1368), will use the following prescription for his patients with earache, he will certainly relieve the sufferers:

℞ Phenol (acidi carbolici) ..... m. x | 65
Chloralı hydrati
Camphoræ, āā ..... gr. x | 65
Olei ricini, q. s. ad ..... 3 iv. | 15

M. Heat the mixture and fill the ear with it and then cover the ear with a hot damp cloth. I have used this prescription for seven years with perfectly satisfactory results. J. P. PICKARD.

# The Public Service

## Army Changes.

Memorandum of Changes of Stations and Duties of Medical Officers, U. S. Army, week ending April 27, 1907:

Lyster, W. J. L., asst.-surgeon, will proceed from Fort McIntosh, Texas, to Fort Sam Houston, Texas, for temporary duty.

Rhoads, T. L., asst.-surgeon, granted leave of absence for one month, effective about May 1, 1907.

Sweazey, V. E., asst.-surgeon, granted 30 days' leave of absence, effective about May 20, 1907.

Heard, G. P., asst.-surgeon, will proceed from Fort Wingate, N. M., to Fort Huachuca, Arizona, for duty as member of board of officers to examine candidates for admission to U. S. Military Academy.

O'Connor, R. P., asst.-surgeon, will proceed from Fort Leavenworth, Kan., April 29, 1907, to Fort Crook, Neb., for temporary duty.

Byrne, C. B., asst.-surgeon general, relieved from duty in the Philippines Division, to take effect at such time as will enable him to comply with this order, and will proceed on transport to sail from Manila about July 15, 1907, to San Francisco, Cal., and on arrival report by telegraph to the Adjutant General of the Army for further orders.

The following named medical officers are relieved from duty at the posts designated after their respective names, to take effect at such time as will enable them to comply with this order, and will proceed at the proper time to San Francisco, Cal., and take transport to sail from that place about June 5, 1907, for the Philippine Islands, and on arrival at Manila will report in person to the Commanding General, Philippines Division, for assignment to duty:

Wyeth, M. C., surgeon, Fort Wadsworth, N. Y.
Snyder, H. D., surgeon, Fort Sam Houston, Texas.
Smith, A. M., surgeon, Fort Douglas, Utah.
Fuller, L. A., asst.-surgeon, U. S. Military Prison, Fort Leavenworth, Kan.
Skinner, G. A., asst.-surgeon, Fort William Henry Harrison, Montana.
Robbins, C. P., asst.-surgeon, Fort Ethan Allen, Vermont.
Rhoads, T. L., asst.-surgeon, Fort Crook, Neb.
Wilson, J. S., asst.-surgeon, Fort Oglethorpe, Ga., to accompany the 26th Infantry from Fort Sam Houston, Texas.
Edger, B. J., Jr., asst.-surgeon, Fort Reno, Okla., to accompany the 26th Infantry from Fort Sam Houston, Texas.
Lyster, W. J. L., asst.-surgeon, Fort McIntosh, Texas, to accompany the 26th Infantry from Fort Sam Houston, Texas.
Reno, W. W., asst.-surgeon, Fort Riley, Kan., to accompany the 10th Cavalry from Fort Robinson, Neb.

Ives, F. J., surgeon, relieved from duty in the Philippines Division, and will proceed from Manila, about June 15, 1907, to San Francisco, Cal., thence to the Presidio of San Francisco, Cal., for duty at that station.

Kendall, W. P., surgeon, relieved from duty in the Philippines Division, and will proceed from Manila about June 15, 1907, to San Francisco, Cal., thence to Fort Sam Houston, Texas, for duty at that station.

Winter, F. A., surgeon, relieved from duty in the Philippines Division, and will proceed from Manila about June 15, to San Francisco, thence to Fort Myer, Va., for duty at that station.

The following named medical officers are relieved from duty in the Philippines Division, to take effect at such time as will enable them to comply with this order, and will proceed on the transport to sail from Manila on or about July 15, 1907, to San Francisco, thence to the posts designated after their respective names, and report to the commanding officers thereof for duty:

Shillock, Paul, surgeon, Fort Robinson, Neb.
Fisher, H. C., surgeon, Fort D. A. Russell, Wyo.
Kopp, J. S., surgeon, Fort Meade, S. D.

Stark, A. N., surgeon, relieved from duty in the Philippines Division, to take effect June 15, 1907, and on expiration of his leave of absence will proceed to Vancouver Barracks, Wash., for duty at that station.

Yost, J. D., Field, P. C., Banta, W. P., asst.-surgeons, relieved from duty in the Philippines Division, and will proceed on the transport to sail from Manila about July 15, 1907, to San Francisco, and on arrival report by telegraph to the Adjutant General of the Army for orders.

Barney, C. N., asst.-surgeon, will proceed to Denver for special surgical treatment, and on the conclusion thereof will return to his proper station.

Davidson, W. T., asst.-surgeon, is detailed as a member of the Army retiring board appointed to meet at Denver, by Par. 12, S. O. 122, May 22, 1906, War Department, vice Captain George P. Heard, asst.-surgeon, hereby relieved.

Maus, L. M., deputy surgeon general, relieved from duty as chief surgeon, Department of Texas, and will proceed to San Francisco, Cal., and take transport to sail from that place July 5, 1907, for the Philippine Islands, and on arrival at Manila will report to the Commanding General, Philippines Division, for assignment to duty.

Moseley, E. B., asst.-surgeon general, will report in person to Brigadier General William P. Hall, adjutant general, President of the Army Retiring Board, appointed by Par. 8, S. O. 239, Oct. 9, 1906, War Department, at such time as he may designate, for examination by the board, and on completion of his examination will return to the place of receipt by him of this order.

Newgarden, G., surgeon, retired from active service on account of disability incident thereto, on April 24, 1907.

Shaw, H. A., surgeon, left Fort Slocum, N. Y., with recruits en route to San Francisco, Cal.

Long, C. J., dental surgeon, left Fort William Henry Harrison, Mont., for duty at Fort Missoula, Mont.

McAlister, John A., dental surgeon, left Fort Sheridan, Ill., for duty at Fort Wayne, Mich.

Halliday, F. A., cont.-surgeon, granted leave of absence for one month.

Whitney, Walter, cont.-surgeon, relieved from duty at Fort Preble, Me., and ordered to Fort McPherson, Ga., for duty.

O'Day, S. F., cont.-surgeon, ordered from New York City to Fort Totten, N. Y., for duty.

Wren, R. J., cont.-surgeon, relieved from duty at Fort Totten, N. Y., and ordered to Fort Slocum, N. Y., for duty.

## Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending April 27, 1907:

F. A. Asserson, passed asst.-surgeon, detached from the *Columbia* when placed out of commission, and ordered to the *Kansas*.

J. T. Kennedy, passed asst.-surgeon, detached from the *Hancock* and ordered to attend course instruction at the Naval Medical School, Washington, D. C.

R. C. Hansdell, asst.-surgeon, detached from the *Maine* and ordered to *Connecticut*.

H. A. May, asst.-surgeon, ordered to the Navy Yard, Norfolk, Va.

M. C. Baker, acting asst.-surgeon, detached from the Navy Yard, Norfolk, Va., and ordered to duty at the Naval Hospital at that place.

J. G. Field, surgeon, detached from duty with Marine Recruiting party at Dallas, Tex., and ordered to duty with the Marine Recruiting party at Houston, Tex., May 12.

E. L. Jones, asst.-surgeon, orders of March 20 modified; ordered to the *Milwaukee*.

## Public Health and Marine-Hospital Service.

List of changes of stations and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended April 24, 1907:

Carrington, P. M., surgeon, detailed to represent the service at the meetings of the National Association for the Study and Prevention of Tuberculosis, and the twenty-fourth annual meeting of the American Climatological Association, to be held in Washington, D. C., May 6-9, 1907.

Lavinder, C. H., passed asst.-surgeon, granted leave of absence for one month from April 24, 1907.

Hobdy, W. C., passed asst.-surgeon, directed to proceed to San Francisco, Cal., for special temporary duty, on completion of which to rejoin station.

Boggess, J. S., passed asst.-surgeon, directed to proceed from St. John, N. B., to Quebec, Canada, for duty in connection with the examination of alien immigrants.

Bailey, C. W., acting asst.-surgeon, granted leave of one day, April 23, 1907.

Bullard, J. T., acting asst.-surgeon, granted leave of absence for nine days from March 23, 1907, account sickness.

Foster, S. B., acting asst.-surgeon, granted six days' leave of absence from April 19, 1907.

Keatley, H. W., acting asst.-surgeon, granted leave of absence for three days from April 16, 1907, under Paragraph 210 of the Regulations.

Onuf, R., acting asst.-surgeon, granted leave of absence for two days from April 10, 1907, account sickness.

Schwartz, Louis, acting asst.-surgeon, granted leave of absence for four days from April 7, 1907, account sickness.

Schug, F. J., acting asst.-surgeon, granted leave of absence for fifteen days from May 3, 1907.

BOARD CONVENED.

Board of medical officers convened to meet at Galveston, Texas, April 22, 1907, for the physical examination of an officer of the revenue cutter service. Detail for the board: Passed Asst.-Surgeon G. M. Corput, chairman; Acting Asst.-Surgeon William H. Gammon, recorder.

## Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended, April 26, 1907:

SMALLPOX—UNITED STATES.

California: Los Angeles, March 31-April 7, 1 case.
District of Columbia: Washington, April 13-20, 1 case.
Florida: Duval County, Jacksonville, April 6-13, 1 case; Hillsboro County, Tampa and Port Tampa, April 6-20, 14 cases; Polk County, April 6-20, 8 cases; Santa Rosa County, April 6-20, 16 cases.
Illinois: Chicago, April 13-20, 1 case; Galesburg, April 6-20, 3 cases.
Indiana: Elkhart, April 6-20, 6 cases; Indianapolis, April 14-21, 5 cases; Lafayette, April 8-15, 1 case; South Bend, April 6-20, 6 cases.
Iowa: Davenport, April 8-15, 1 case.
Kentucky: Louisville, April 11-18, 5 cases.
Louisiana: New Orleans, April 8-20, 15 cases (4 imported), 2 deaths; Shreveport, April 6-13, 1 case.
Massachusetts: Chelsea, April 6-20, 3 cases; Lawrence, April 6-20, 25 cases.
Michigan: Detroit, April 13-20, 3 cases; Saginaw, April 6-20, 2 cases.
Minnesota: Stillwater, March 1-31, 1 case; Winona, April 6-20, 4 cases.
Missouri: St. Joseph, April 6-20, 17 cases; St. Louis, April 13-20, 3 cases.
New York: New York, April 6-20, 3 cases, 1 death.
North Carolina: Greensboro, April 6-20, 7 cases.
Ohio: Toledo, March 26-April 20, 5 cases.
South Carolina: Charleston, March 1-31, 1 case.
Texas: Corpus Christi, April 13, 2 cases; Houston, March 30-April 13, 18 cases; Laredo, April 13, 1 case (imported from Mexico).
Utah: Ogden, March 1-31, 3 cases.
Washington: Spokane, April 6-13, 12 cases.
Wisconsin: La Crosse, April 6-13, 1 case; Milwaukee, March 30-April 20, 21 cases.

SMALLPOX—FOREIGN.

Brazil: Bahia, March 9-23, 6 cases; Para, March 16-31, 7 cases, 2 deaths; Pernambuco, Feb. 15-28, 55 deaths; Rio de Janeiro, March 10-31, 5 cases, 1 death.
Canada: Sherbrooke, April 13-20, 7 cases.
Italy: General, March 28-April 4, 9 cases; Naples, March 23-April 13, 18 cases; Turin, March 16-31, 4 cases.
Luxembourg: March 9-30, 3 cases.
Madeira: Funchal, March 16-April 17, 10 cases, 3 deaths.
Mexico: Aguas Callentes, March 31-April 13, 18 deaths; Mexico City, March 9-23, 24 deaths; Monterey, April 7-14, 1 death; Nogales, March 2-April 6, 9 cases.
Portugal: Lisbon, March 29-April 6, 10 cases.
Russia: Moscow, March 16-30, 10 cases, 2 deaths; Odessa, March 16-30, 62 cases, 9 deaths; Riga, March 23-30, 5 cases; St. Petersburg, March 16-23, 3 cases; Warsaw, March 16-23, 1 death.
Siberia: Vladivostok, Feb. 22-28, 1 case, 1 death.
Spain: Barcelona, March 16-April 10, 9 deaths; Cadiz, March 1-31, 6 deaths; Cartagena, March 23-30, 1 death; Seville, March 1-31, 8 deaths; Valencia, March 23-April 7, 7 cases.
Syria: Damascus, March 9-30, present.
Switzerland: Geneva, March 23-30, 2 cases.

YELLOW FEVER.

Brazil: Manao, March 16-23, 1 death; Para, March 16-31, 7 cases, 5 deaths; Rio de Janeiro, March 17-24, 4 cases, 4 deaths.
Ecuador: Guayaquil, March 16-30, 15 deaths.
West Indies: Trinidad, Port of Spain, March 23-April 6, 7 cases, 2 deaths.

CHOLERA.

India: Bombay, March 19-26, 5 deaths; Calcutta, March 2-16, 50 deaths; Madras, March 19-23, 12 deaths; Rangoon, March 9-16, 25 deaths.

PLAGUE—INSULAR.

Hawaii: Honolulu, April 19-23, 1 case, 4 deaths.

PLAGUE—FOREIGN.

Japan: Formosa, March 16-23, 98 cases, 77 deaths.
Peru: Callao, March 9, 1 case; Chepen, March 13, 1 death; Chiclayo, March 7-13, 8 cases, 6 deaths; Eten, March 7-13, 10 cases, 5 deaths; Mollendo, March 13, 1 case (imported from Arequipa); Paita, March 7-13, 20 cases, 13 deaths; San Pedro and Pacasmayo, March 13, 1 case, 1 death; Trujillo, March 7-13, 18 cases, 11 deaths.
Straits Settlements: Singapore, March 2-9, 1 case, 1 death.
Russia: Cronstadt, March 29, 1 case at laboratory of Imperial Institute.

PLAGUE—FOREIGN.

Brazil: Para, March 16-31, 5 cases, 4 deaths; Pernambuco, Feb. 4-28, 3 deaths; Rio de Janeiro, March 10-31, 9 cases, 2 deaths.
Chile: Antofagasta, March 16-23, 42 cases, 23 deaths; Santiago, Feb. 23-March 2, 24 deaths.
China: Hongkong, March 2-9, 1 case, 1 death.
Egypt: Assiout Province, March 23-27, 5 cases, 6 deaths; Girgeh Province, March 23-25, 3 cases, 2 deaths; Kenek Province, March 20-27, 27 cases, 20 deaths.
India: General, March 9-16, 58,099 cases, 49,440 deaths; Bombay, March 19-26, 633 cases, 152 deaths; Calcutta, March 2-16, 153 cases; Rangoon, March 9-16, 72 deaths.

# Marriages

WILLIAM C. LAWRENCE, M.D., to Miss Florence Lamke, both of Detroit, April 18.

HENRY B. LEMERE, M.D., to Miss Louis Van Gieson, both of Omaha, Neb., April 6.

CHARLES E. RICH, M.D., Lynn, Mass., to Miss Mary Hodson, Center Ossipee, N. H., recently.

LEROY ELMER RAYHORN, M.D., to Miss Mary Francis Hudson, at Richmond, Va., April 17.

WASHINGTON WATERS, M.D., to Miss Elizabeth Melinda Yearley at Rockville, Md., April 17.

CLIFFORD GROSELLE GRULLE, M.D., Chicago, to Miss Margaret Freer of Hinsdale, Ill., April 24.

JAMES MARSHALL PRICE, M.D., to Miss Josephine Blanche Oder, both of Frostburg, Md., April 17.

CHARLES HENRY BLAKE, M.D., Newark, Del., to Miss Helen Jenness Calvert, at Baltimore, April 17.

JOHN D. MOORE, M.D., Bloomfield, N. J., to Miss Agatha Lenahan of New Haven, Conn., April 20.

GEORGE FRASER WILSON, M.D., Charleston, S. C., to Miss Anna Preston, at Leesburg, Va., April 18.

JAMES ALLAN STEWART, M.D., Plainfield, N. J., to Miss Mary E. Walker, at Baltimore, April 16.

JAMES P. REED, M.D., to Mrs. Rose Anteau, both of Rockwood, Mich., at Newport, Mich., April 19.

WINSLOW C. CHAMBERS, M.D., Owatonna, Minn., to Miss Gertrude M. Wolfer of Stillwater, April 18.

WILLIAM SAMUEL BELLOWS, M.D., Waukegan, Ill., to Miss Isabelle Elizabeth Suess of Chicago, April 23.

CARY D. LANGHORNE, M.D., U. S. Navy, to Miss Zaidee Forsyth Gaff, at Washington, D. C., April 30.

SAMUEL STEVENS, M.D., Kalamazoo, Mich., to Miss Ruby Pearl Berger, at White Pigeon, Mich., April 16.

CHARLES FOREST HENDERSON, M.D., South McAlester, I. T., to Miss May West of Bloomington, Ill., March 19.

WILLIAM CURTIS CAYWOOD, M.D., Richmond, Ky., to Miss Daisy Frances Sipples of Lexington, Ky., July 12, 1906.

ROBERT E. BRATTON, M.D., Willard, Tenn., to Miss Annie D. Wakefield of near Echo, Macon County, Tenn., April 17.

## Deaths

**William Baldwin Fletcher, M.D.** College of Physicians and Surgeons in the City of New York, 1860; of Indianapolis; a member of the American Medical Association; formerly president of the Indianapolis Medical Society; a member of the Mississippi Valley Medical Association; who served as a scout in the early part of the Civil War, and was captured and imprisoned and later was a member of the medical corps of the Army; a member of the Indiana State Senate in 1882 and 1883; from 1883 to 1888 superintendent of the Indiana Hospital for the Insane; who established in 1888 a private sanitarium at Indianapolis for the treatment and care of the insane, known as Neuronhurst, of which he was superintendent until his death; professor and later professor emeritus of nervous and mental diseases in the Medical College of Indiana, the school of medicine of Purdue University; and eminent as an alienist and medicolegal expert, died April 25 at Orlando, Fla., from the effects of a cerebral hemorrhage, aged 69.

**Mads Christian Christensen, M.D.** University of Nebraska College of Medicine, Lincoln and Omaha, 1892; a member of the Council Bluffs (Iowa) Medical Society and Medical Society of the Missouri Valley; alderman of Council Bluffs from 1900 to 1902 and one of the most esteemed Scandinavian practitioners of Council Bluffs, died at his home in that city, April 16, from nephritis, after an illness of two weeks, aged 55.

**John W. Talbott, M.D.** University of Pennsylvania Department of Medicine, Philadelphia, 1861; a surgeon in the Confederate service during the Civil War, a pioneer settler of Texarkana, Texas, and a member of the Miller County Medical Society, died at the Pine Street Sanitarium, Texarkana, from shock, two hours after an operation for cancer of the tongue, February 2, aged 67.

**Richard F. Michel, M.D.** Medical College of the State of South Carolina, Charleston, 1847; a member of the Medical Association of the State of Alabama and Montgomery County Medical Society; surgeon in the Confederate service during the Civil War, and widely known throughout the South as a physician and scientist, died at his home in Montgomery, April 19, aged 80.

**Herbert Smith Olney, M.D.** University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1901; formerly pathologist in the hospital of the Colorado Fuel and Iron Co., Pueblo, and later a practitioner of Detroit, died at the home of his father in Fresno, Cal., April 15, from tuberculosis, after an illness of nearly two years, aged 30.

**Christopher B. Currier, M.D.** University of Pennsylvania, Department of Medicine, Philadelphia, 1860; one of the founders and first dean of the Homeopathic Medical College of San Francisco, and president of the State Homeopathic Society, died in the Homeopathic Hospital, San Francisco, April 16, after a long illness, aged 78.

**Alfred J. Yost, M.D.** University of Pennsylvania, Department of Medicine, Philadelphia, 1893; a member of the Medical Society of the State of Pennsylvania and Lehigh County Medical Society; mayor of Allentown; coroner of Lehigh County in 1895 and 1898, died at his home in Allentown, April 16, from tuberculosis, aged 36.

**William Wilson, M.D.** Bennett College of Eclectic Medicine and Surgery, Chicago, 1884; a member of the American Medical Association; a well-known practitioner and clergyman of Coldwater, Mich.; died in Harper Hospital, Detroit, from abscess of the lung, April 14, after a prolonged illness, aged 84.

**Francis Edmonds Corbin, M.D.** Detroit Medical College, 1870; a member of the American Medical Association; until 1896 a practitioner of northern Michigan, and since that time a resident of Los Angeles, Cal., died at his home in that city, April 15, from uremia, after an illness of two days, aged 59.

**Junius F. Smith, M.D.** Long Island College Hospital, Brooklyn, 1890; a member of the Connecticut State and Fairfield County medical societies; representative from Brookfield in the General Assembly, died at his home in Brookfield, April 22, from pneumonia, after an illness of two weeks, aged 42.

**Charles C. Blanchard, M.D.** Bennett College of Eclectic Medicine and Surgery, Chicago, 1883; physician at the Delavan (Wis.) State School for the Deaf, a veteran of the Civil War, and formerly alderman and health commissioner of Delavan, died at his home in that city, April 19, aged 63.

**William Troy, M.D.** McGill University, Medical Faculty, Montreal, 1891; some-time president of the Ottawa (Ont.) Medical Association, and one of the staff of the Water Street Hospital in that city, died at his home in Ottawa, April 13, after an illness of a year and a half, aged 45.

**James Hogan, M.D.** Department of Medicine of the University of Pennsylvania, Philadelphia, 1842; a practitioner of Henry County, Mo., for nearly 30 years, and later on of Fort Scott, Kan., and Springfield, Mo., died at the home of his nephew in Knobnoster, Mo., April 12, aged 91.

**G. Ernest Roy, M.D.,** Medical Department, Victoria College, Toronto, 1861; surgeon-major of the Sixty-fifth Regiment; government inspector of anatomy; who served during the rebellion in Cuba, died at his home in Hochelaga, Montreal, from diabetes, April 14, aged 74.

**Samuel Jefferson Montgomery, M.D.** Louisville (Ky.) Medical College; a member of the Arkansas State and Conway County medical societies, died at his home in Morrillton, Ark., February 2, from cirrhosis of the liver, after an illness of three years, aged 57.

**Henry Wells Spillman, M.D.** New England Botanico-Medical College, Worcester, Mass., 1848; who retired from practice 45 years ago; died at his home in Edgerton, Wis., April 1, one week after a fall in which he sustained a fracture of the head of the femur, aged 87.

**Joseph B. E. Gates, M.D.** University of Tennessee, Medical Department, Nashville, 1876; a member of the Kentucky State and Filton County medical societies, died at his home in Fulton, Ky., from abscess of the liver, March 15, after an illness of six weeks, aged 62.

**Edwin Gaylord, M.D.** Rush Medical College, Chicago, 1856; Medical Department University of Nashville (Tenn.) 1859; a veteran of the Civil War, and for many years a practitioner of Magnolia, Ill., died at his home in Pontiac, Ill., April 16, from pneumonia, aged 73.

**Addison W. Guernsey, M.D.** University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1854; for more than half a century a practitioner of Almond, Wis., died at his home in that village, March 3, after a long period of invalidism, aged 78.

**Charles A. Fortin, M.D.** University of Bishop College, Faculty of Medicine, Montreal, 1897; of Lewiston, Maine; a member of the Maine Medical Association and Androscoggin County Medical Society, died in Las Palmas, Canary Islands, March 22, aged 34.

**William M. Kern, M.D.** University of Pennsylvania, Department of Medicine, Philadelphia, 1847; surgeon in the Federal service during the Civil War; who retired from practice 15 years ago, died at his home in Germantown, Philadelphia, April 17, aged 86.

**Robert Wilkie Martin, M.D.** Homeopathic Medical College of Pennsylvania, Philadelphia, 1865; a veteran of the Civil War; for many years a practitioner of Philadelphia; died at his home in that city, April 11, after an illness of three years, aged 65.

**Cecil Metcalf Ross, M.D.** Cornell University Medical College, New York City, 1902; formerly interne at the Smith Infirmary, Staten Island, and the Sailors' Snug Harbor Hospital, died in La Paz, Bolivia, South America, March 24, from pneumonia, aged 30.

**Jonathan F. Leaming, M.D.** Jefferson Medical College, Philadelphia, 1846; an aged practitioner of Cape May Court House, N. J., died in that place, April 25, from the effects of burns received during a fire at his home, two days before, aged 85.

**Morris P. Roe, M.D.** Bennett College of Eclectic Medicine and Surgery, Chicago, 1873; a member of the Medical Society of Guthrie, Okla.; died at his home in Fallis, Okla., April 7, from cerebral hemorrhage, after an illness of two hours, aged 58.

**Ezra Weis, M.D.** University of Maryland School of Medicine, Baltimore, 1851; surgeon of the Ashland (Ky.) General Hospital during the Civil War; a practitioner of Peoria, Ill., for 20 years, died at his home in that city, April 12, aged 87.

**James W. Gray, M.D.** College of Physicians and Surgeons, Keokuk, Iowa, 1873; an old practitioner of Calhoun, Mo., died at St. Joseph's Hospital, Kansas City, Mo., April 16, two days after an operation on the intestines, aged 62.

**Charles W. Austell, M.D.** Atlanta (Ga.) Medical College, 1893; a member of the South Carolina Medical Association and Union County Medical Society, died at his home in Union, S. C., April 13, after an illness of one month, aged 45.

**Edwin D. Q. Lowther, M.D.** Kentucky School of Medicine, Louisville, 1883; a member of the Clarke County (Ark.) Medical Society, died recently at his home in Hollywood, from pneumonia, after an illness of 13 days, aged 40.

**Cary Randolph Bankhead, M.D.** St. Louis Medical College, 1856; a member of the Pike County (Mo.) Medical Society, died recently at his home in Paynesville, Mo., from catarrh of the bowel, after an illness of one week, aged 71.

**Joseph E. Morr, M.D.** Fort Wayne (Ind.) College of Medicine, 1894; of Orland, Ind.; formerly of Albion, Ind., died at Bronson, Mich., April 13, from the effects of morphin self-administered with suicidal intent, aged 40.

**Josephus B. Charlton, M.D.** University of Iowa College of Medicine, Iowa City, 1872; a member of the Iowa State and Cerro Gordo County medical societies, died at his home in Clear Lake, Iowa, April 24, aged 67.

**John H. Givens, M.D.** Louisville (Ky.) Medical College, 1872; a member of the Louisiana State and Bienville Parish medical societies, died at his home in Arcadia, April 18, after a lingering illness, aged 60.

**James H. O'Hara, M.D.** Medical Department of the Tulane University, New Orleans, 1874; died at his home in Grandview, Texas, April 13, from cerebral hemorrhage, after an illness of one day, aged 58.

**Alfred J. Butterfield, M.D.** Eclectic Medical Institute, Cincinnati, 1882; died at his home in Binghamton, N. Y., April 18, after an illness of nearly two years, aged 55.

**John Fletcher Tidwell** (Years of Practice, Illinois), a veteran of the Civil War, died at his home in Marion, Ill., from appendicitis, April 15, aged 66.

**Harry M. Clark, M.D.** Southern Medical College, Atlanta, Ga., 1887; died at his home in Atlanta, Ga., April 14, after an illness of two days, aged 49.

**Desire Drainville, M.D.** Medical Department of Victoria College, Toronto, 1868; died at his home in Montreal, P. Q., April 9, aged 65.

### Deaths Abroad.

**A von Mosetig-Moorhof, M.D.** The cable brings word of the accidental drowning of this well-known professor of surgery at Vienna, April 26, aged 69. He took a prominent part in military surgery during all the campaigns in Europe after he graduated in 1861, and has been a frequent contributor to the literature. His name has become familiar during the last few years by his method of "Iodoform-Plombierung" or filling for cavities in bones.

**O. Rosenbach, M.D.** formerly professor of internal medicine at Breslau, died March 19, aged 56. He published numerous works on various medical questions, preaching constantly the importance of functional diagnostics and calling attention to a number of previously disregarded signs, symptoms and syndromes, especially the digestive reflex neuroses, emotional dyspepsia and psychic treatment of functional nervous affections.

**X. Galezowski, M.D.,** a well-known ophthalmologist of Paris, died March 25, aged 74. He was one of the first to study the pathology of the fundus and retina in relation to affections of the nervous system, and published numerous works on this and allied subjects.

**G. v. Hirsch, M.D.,** body physician to the Czar of Russia, died at St. Petersburg, March 20, aged 79.

## *Medical Education and State Boards of Registration*

### COMING EXAMINATIONS.

NEVADA State Board of Medical Examiners, Carson City, May 6. Secretary, Dr. S. L. Lee, Carson City.

ILLINOIS State Board of Health, East St. Louis, May 8-10. Secretary, Dr. J. A. Egan, Springfield.

LOUISIANA State Board of Medical Examiners, New Orleans, May 9-10. Secretary, Dr. F. A. Larue, 211 Camp St., New Orleans.

MISSISSIPPI State Board of Health, State Capitol, Jackson, May 14. Secretary, Dr. J. F. Hunter, Jackson.

MASSACHUSETTS Board of Registration in Medicine, Room 15, State House, Boston, May 14-16. Secretary Dr. E. B. Harvey, Boston.

FLORIDA State Board of Medical Examiners (Regular), Jacksonville, May 15-16. Secretary, Dr. J. D. Fernandez, Jacksonville.

NEW YORK State Boards of Medical Examiners, Albany, May 21-24. Chief of Examining Division, Charles F. Wheelock, Albany.

NEBRASKA State Board of Health, State House, Lincoln, May 28-29. Secretary, Dr. Geo. H. Brash, Beatrice.

INDIANA Board of Medical Registration and Examination, Room 120, State House, Indianapolis, May 28-31. Secretary, Dr. W. T. Gott, Indianapolis.

### Third Annual Educational Conference.

The Council on Medical Education held its third annual conference Monday, April 29, in the Auditorium Hotel, Chicago. Besides the members of the Council, 84 delegates were present, representing 22 state examining boards, 18 state medical societies, the 3 departments of the government services, 3 college associations and 7 colleges of liberal arts. A most interesting session was held. Reports for the work of the past year included an account of the inspection of medical schools and the classification of schools based on the state board examinations during 1904 and 1905 inclusive. Forty-four colleges have adopted the requirement for admission to medical study of at least one year in a college of arts to be devoted to physics, chemistry, biology and one language, to become effective Jan. 1, 1910; 18 of these will require two years or more of university work, or plan to give the combined course for the degrees of B.S. and M.D. Dr. John M. Dodson gave an exhaustive committee report on the advisability of the medical school allowing advanced standing to graduates of colleges of liberal arts. It was recommended that such advanced standing be given if by inspection it be found that the institutions are properly equipped to teach the branches for which advanced credits are claimed.

Another committee, of which Dr. John H. Long was chairman, reported on the details for the year in physics, chemistry, biology and languages to be required in addition to a four-year high school education preliminary to the study of medicine. The committee believed that if this work were required, the liberal arts colleges would soon adjust their work that the subjects could all be taken in the freshman year by prospective medical students.

Chancellor J. H. Kirkland of Vanderbilt University spoke at length, showing that opportunities for liberal education in the South are lacking, particularly along the line of good high schools.

In the absence of Dr. Dudley Tait, the discussion of the inspection of preliminary credentials by an officer of the examining board was opened by Dr. S. D. Van Meter. The general opinion was that such a measure was desirable.

Following the discussion of "What Constitutes a Reputable Medical College," which, in the absence of Dr. Howard J. Rogers, was opened by Dr. Victor C. Vaughan, a committee was appointed by the chairman to give more consideration to the subject and to report at the next conference. The committee appointed is Dr. Victor C. Vaughan of the University of Michigan, Dr. W. J. Means of the Ohio Medical University, and Dr. George W. Webster, president of the Illinois State Board of Health.

"Methods of Conducting a State Board Examination" was the subject of a paper read by Dr. Beverly D. Harison, secretary of the Michigan State Board of Registration. The use of a laboratory and clinical tests in addition to oral and written examinations were advocated. This was followed by "A Plea for a Licensure Examination in Two Parts" by Dr. W. J. Means, chairman of the Judicial Council of the Association of American Medical Colleges. Considerable discussion followed the last two papers, and opinions were much at variance except that present methods are not satisfactory.

On the whole, great interest was manifested in the reports, papers and discussions, and doubtless much good will result from the conference. A full report will appear later.

**Vermont January Report.**—Dr. W. Scott Nay, secretary of the Vermont State Board of Medical Registration, reports the written examination held at Montpelier, Jan. 8-10, 1907. The number of subjects examined in was 13; total number of questions asked, 95; percentage required to pass, 75. The total number of candidates examined was 11, of whom 8 passed, 1 failed and 2 did not complete the examination. The following colleges were represented:

| PASSED. College. | Year Grad. | Per cent. |
|---|---|---|
| College of P. & S., Boston | (1906) | 80.6 |
| Dartmouth Med. Coll. | (1897)* | .... |
| Bellevue Hospital Med. Coll. | (1892) | 75.3 |
| University of Vermont | (1906) 78.1, 78.5, 81.5, | 82.1 |
| McGill University, Quebec | (1906) | 75.3 |
| FAILED. | | |
| Tufts Coll. Med. School | (1906) | 74.3 |

*Percentage not given.

**Reciprocity Convention.**—The American Confederation of Reciprocating Examining and Licensing Medical Boards held its meeting in Chicago the day after the meeting of the Council on Medical Education, noted above. A committee was appointed to secure data regarding the medical colleges in the country and to report at the next meeting with recommendations looking to the better control of colleges by the states in which they are situated. Drs. William A. Spurgeon, Muncie, Ind; Beverly D. Harison, Detroit; Benjamin F. Bailey, Lincoln, Neb.; John V. Stevens, Jefferson, Wis., and Albert H. Hamel, De Soto, Mo., were named as the committee. At the conclusion of the session Dr. William A. Spurgeon was re-elected president and Dr. Beverly D. Harison, secretary. A complete report of the meeting will appear later.

**New Practice Acts in Texas and New Mexico.**—We learn that the new medical practice act of Texas has been signed by the governor and will become effective June 1. This provides for a single examining board in place of the three separate boards, requires applicants for license to be graduates from reputable medical colleges, provides for reciprocity, for a register to be kept of all licensed physicians and for the revocation of licenses for cause.——New Mexico has just secured a new medical practice act, which provides for a written examination and graduation from a reputable medical college, with reciprocity at the discretion of the board.

**Tennessee Secures Higher Requirements.**—Dr. E. E. Hunter, president of the Tennessee State Board of Medical Examiners, reports that an amendment to the laws of that state has been passed making provision for reciprocity, and also requiring that hereafter to secure a license to practice the applicant must have graduated from a recognized medical college.

**New Officers of Connecticut Eclectic Examining Board.**—Word has just come to us that at a meeting of the Connecticut Eclectic Board, held at New Haven, March 12, 1907, the following officers were elected: President, Dr. John W. Fyfe, Saugatuck, to succeed Dr. L. Bailey; secretary, Dr. T. S. Hodge, Torrington, to succeed Dr. George A. Faber.

## *Society Proceedings*

### COMING MEETINGS.

AMERICAN MEDICAL ASSOCIATION, Atlantic City, June 4-7.

Association of American Medical Colleges, Washington, May 6.
Amer. Assn. of Genito-Urinary Surgeons, Washington, May 7-9.
Am. Assn. of Pathologists and Bacteriologists, Washington, May 7-9.
Amer. Climatological Association, Washington, May 7-9.
American Gynecological Society, Washington, May 7-9.
Amer. Laryngological Association, Washington, May 7-9.
Amer. Medico-Psychological Association, Washington, May 7-9.
American Ophthalmological Society, Washington, May 7-9.
American Orthopedic Society, Washington, May 7-9
American Pediatric Society, Washington, May 7-9.
American Assn. of Physicians, Washington, May 7-9.
American Surgical Association, Washington, May 7-9.
Nebraska State Medical Association, Omaha, May 7-9.
Texas State Medical Association, Mineral Wells, May 7.
Utah State Medical Association, Salt Lake City, May 7-8.
New Mexico Medical Association, Las Cruces, May 8-9.
Kansas Medical Society, Kansas City, May 8-10.
Oklahoma State Medical Association, Shawnee, May 14-15.
North Dakota State Medical Association, Minot, May 14-15.
Louisiana State Medical Society, New Orleans, May 14-16.
Missouri State Medical Association, Jefferson City, May 14-16.
Arkansas Medical Society, Little Rock, May 15-17.
Iowa State Medical Society, Cedar Rapids, May 15-17.
Michigan State Medical Society, Saginaw, May 15-16.
Montana State Medical Association, Billings, May 15-16.
New Hampshire Medical Society, Concord, May 16-17.
West Virginia State Medical Association, Huntington, May 15-17.
Illinois State Medical Society, Rockford, May 21-23.
Connecticut State Medical Society, Hartford, May 22-23.
Indiana State Medical Association, Indianapolis, May 22-24.

### MISSISSIPPI STATE MEDICAL ASSOCIATION.

*Fortieth Annual Session, held at Gulfport, April 9-12, 1907.*

The President, DR. WALTER W. CRAWFORD, Hattiesburg, in the Chair.

#### Welcome.

At the opening session the address of welcome was delivered by Hon. James H. Neville, Gulfport. A response was made by Dr. Robert S. Curry, Columbus.

#### Life Insurance Fees.

In the House of Delegates, the insurance question was carefully considered and resolutions were unanimously adopted pledging the members of the association to make no examinations for old-line companies for less than $5, and requesting the officers of all county societies to obtain from all reputable physicians, whether members or non-members, an agreement to cooperate in the enforcement of these resolutions. It was also resolved that no member of the association should accept an appointment as examiner for any corporation or society to take the place of any physician who was removed on account of adherence to the action of the society.

#### Increase Requirements for License.

A resolution was adopted memorializing the state legislature to increase the requirements for license to practice medicine by exacting from all applicants a diploma from a regular, recognized medical college before being allowed to take the examination. A committee of five, of which the president is chairman, was appointed to present this resolution to the legislature.

#### Apportionment of State Board.

A committee of five appointed by the president was instructed to endeavor to secure for the association the appointment of one member of the State Board of Health from every congressional district, instead of five for the entire state, as at present.

#### Papers Read.

Among the more important papers presented at this session were those by Dr. Walter H. Rowan, Wiggins, on "Forceps and Their Uses;" by Dr. Amadee P. Granger, New Orleans, on "Electric Treatment of Dysmenorrhea;" by Drs. Dudley W. Jones, Fernwood, and Hugh L. Sutherland, Rosedale, on "Quinin," and by Dr. Thomas Purser, McComb, on "The Need of a More Thorough Knowledge of Materia Medica."

#### Election of Officers.

The following officers were elected for the ensuing year: President, Dr. Robert S. Curry, Columbus; vice-presidents, Drs. Harley R. Shands, Jackson, Thomas F. Elkin, Tupelo, and Richard D. Sessions, Natchez; secretary, Dr. Ewing F. Howard, Vicksburg; delegate to the American Medical Association, Dr. Walter W. Crawford, Hattiesburg, and alternate, Dr. H. B. Powell, Ocean Springs.

#### State Board Named.

The following were elected members of the State Board of Health: Drs. Daniel J. Williams, Ellisville; Elbert A. Cheek, Arcola; Giles S. Bryan, Amory; John Barrington, Yazoo City, and Louis D. Dickerson, McComb.

Natchez was selected as the next place of meeting.

#### Local Comment.

The *Mississippi Medical Monthly*, speaking of the meeting editorially, says: "The 1907 meeting of the state association passes into history as one of the most successful yet held. While the number of papers read was not so great as at the 1906 meeting, ample scientific work was done and all present returned to their homes feeling benefited by the meeting. The sessions of the House of Delegates were interesting in the extreme. Gulfport has set a rapid pace for Natchez to follow if she proposes to equal in 1908."

## MEDICAL ASSOCIATION OF GEORGIA.

*Fifty-Eighth Annual Session, held at Savannah, April 17-19, 1907.*

(*Continued from page 1452.*)

### Vincent's Angina.

DR. T. E. OERTEL, Augusta, reported the following case of this rare disease in Georgia:

Sept. 7, 1906, Mrs. E. C., aged 37, presented herself for treatment. For the past three years she had been in poor health and had had repeated attacks of sore throat, which, in fact, had never been entirely well. She had been under the treatment of her family physician. When the attacks come on there is usually a marked swelling of the glands of the neck on the affected side. Pain is intense and for days she is scarcely able to swallow food. She always has considerable fever. The throat becomes ulcerated and the breath offensive. Until recently only the left side has been involved. On the left there is now little soreness, the chief trouble being with the right tonsil, which has been ulcerated for some weeks. Inspection of the neck shows the right cervical glands are enlarged to such an extent as to form a tumor mass extending from the angle of the jaw to the clavicle. The tumor is tender to the touch, hard, and shows no fluctuation. On the right tonsil there is a ragged ulcer about 3 cm. in diameter, the sides of which are irregular, the base moth-eaten, and the entire surface covered with a thick, pseudo-membrane, yellowish, tough and adherent. When this is removed the underlying surface bleeds slightly and is raw and granular. On the left side the mucous membrane is thickened and the tonsil enlarged. In the left tonsil there is a deep fissure, the site of the former ulceration. The mucosa of the pharynx shows no ulcerations, but is hypertrophied and hyperemic. Smears from the ulcer and also from the fissure show the characteristic organisms of Vincent's angina. Treatment with antiseptics locally and a tonic mixture caused a rapid healing of the ulcer, and with its disappearance the glandular symptoms subsided. At the end of two weeks the patient was sent to the country. On her return she passed again under the care of her family physician, Dr. Holliday. Through his courtesy the author has been able to examine smears recently made from her throat. The spirochetæ of Vincent are still present, although there are now no ulcerations and the general condition of the patient is vastly improved.

### Relation of Albuminous Putrefaction in the Intestines to Arthritis Deformans.

DRS. C. R. ANDREWS and MICHAEL HOKE, Atlanta, presented the histories of a few cases, one of which was, in brief, as follows: The patient was a woman, aged 24, who had had chronic deforming arthritis for nine years. She was bedridden, and unable to turn herself without assistance. Emaciation was extreme. The spine from the occiput to the sacrum, the elbows, the wrists, the hands, the hips, knees and ankles were involved. The case is one of chronic arthritis presenting bone absorption, bone hypertrophy, flexion and extension deformities, periarticular and peritendinous fibrous tissue, spindle-shaped swellings. All the subjective symptoms and the temperature and soft tissue swelling disappeared under a fermented milk diet.

After reporting four additional cases in which the results so far obtained are more promising and hopeful, the authors stated that the constant finding of evidences of albuminous putrefaction in the intestine in connection with the cases they have investigated, leads them to believe that the metabolic form of arthritis is directly traceable to the albuminous putrefaction. The uniform improvement of the symptoms, however varied they may have been, the unvarying disappearance most usually of all the soft tissue thickening around the joints when these patients have been put on a fermented milk diet, demonstrate beyond a shadow of a doubt that fermented milk diet is par excellence the food for these patients.

### Treatment of Typhoid Fever.

DR. A. R. SCOTT, McDonough, believes that turpentine, if given in ten-drop doses after each stool, will control the diarrhea. Sometimes, when constipation exists, he advocates giving large doses of castor oil with the turpentine, giving enough to keep the bowels moving two or three times daily. While turpentine given in small doses does not prevent hemorrhage, he has never seen a severe hmorrhage when this agent has been given, and it does not occur so frequently. When hemorrhage occurs he gives it in ten-drop doses after each stool that contains blood, and in patients who have not been taking turpentine in whom hemorrhages have occurred, he has never seen a case where ten-drop doses, repeated, did not control the hemorrhage.

### Home Treatment of Tuberculosis.

DR. J. E. SOMMERFIELD, Atlanta, reported one case of the disease as typical of several The patient had a cough, night sweats and pain in the chest. There was diminished breathing on the left side of the chest. Percussion disclosed dulness over apex of left lung, and on auscultation moist râles are heard anteriorly and posteriorly over left apex. The patient's home was damp, and he advised her to move, which she did. Careful instructions were given as to fresh air, ventilation and cuspidors, and nourishing food was prescribed. At first she took one quart of milk and four raw eggs daily, and in three weeks she was taking half a gallon of milk and ten raw eggs daily. She improved rapidly. An examination recently made shows that the dulness has disappeared and only normal breathing is heard. The first examination of the sputum was positive, but several examinations made within the past six months were negative. The only medication given was a capsule containing guaiacol carbonate, with occasionally a mild laxative added to counteract constipation.

### Paranoia.

DR. W. HERBERT ADAMS, Savannah, defined paranoia as a chronic, progressive form of insanity, beginning in early adult life, in persons of bad neurotic heredity. The characteristic symptom is always the systematized and fixed delusion. Recovery practically never occurs. These persons are all liable to become dangerous; they are the most difficult of all forms to prove insane, and their insanity is frequently not recognized until they have committed some overt act; they have possibly been previously recognized as being eccentric or cranks. Dr. Adams urged that this form of insanity be studied more carefully and intelligently to the end that the public may be more safely guarded.

### Practical Points on Infant Feeding.

DR. SAMUEL A. BISANSKA, Atlanta, said that it is a bad practice to give sterilized milk for too long a period for fear of producing scurvy. His practice is: Sterilize during summer; pasteurize in the spring and fall, and give raw milk during the winter months. During the period of sterilization it is well to give a little orange juice, and by close observation one can prevent scurvy. He has yet to see a case of scurvy among his patients. It is necessary to have a rigid milk inspection in all cities.

### President's Address.

DR. H. H. MARTIN referred to the Council on Pharmacy and Chemistry of the American Medical Association, and spoke of the excellent work it is doing in exposing frauds and publishing formulas of worthy preparations. He said that there is absolutely no excuse for prescribing any others. If members of the medical profession could get together on this question, the doom of the proprietary nostrum would be seen. He recommended that the Association endeavor to secure the enactment of laws that will not only make the conviction of the abortionist easier, but punishment sure and of a character to fit the crime. He recommended also that the Association endorse and aid the movement to establish a state sanatorium for the isolation and treatment of tuberculosis. He suggested unanimous action on the part of county medical societies in regard to establishing a minimum fee of $5 for licensing examination. Finally, he recommended the establishment by the Association of an official journal in lieu of the annual volume of transactions.

(*To be continued.*)

# Therapeutics

**[It is the aim of this department to aid the general practitioner by giving practical prescriptions and methods of treatment for the diseases seen especially in every-day practice. Contributions will be welcomed from our readers.]**

### Antiseptic Powder.

The *Druggists Circular*, April, 1907, publishes the following formula for antiseptic powder, furnished by F. E. Dudson, Charleston, S. C.:

℞. Sodii salicylatis
Acidi borici, āā.....ʒss 15
Sodii bicarbonatis .....ʒiii 90

M. Sig.: Two teaspoonfuls in a pint of warm water. Use as a douche.

### Erythematous Eczema.

Shoemaker, in the *Nashville Journal of Med. and Surg.*, gives the following treatment of this condition:

The patient is kept at rest in bed, and is allowed only milk diet. Calomel, gr. ii (0.13), is given in doses of a tenth of a grain (.006) every half-hour; this is followed by administration of magnesium sulphate, ʒiss (45.). In addition, the patient is given internally vinum antimonii, min. x (0.6) every three hours in water.

Externally, to allay the itching, the following combination is applied with a sponge:

℞. Creosoti .....m. x |6
Magnesii carbonatis .....ʒss 2
Zinci carbonatis precip.....ʒvi 24
Glycerini .....fʒi 4
Liquoris calcis .....fʒiv 15
Aquæ hamamelidis q. s. ad.....fʒi 30

M. Ft. lotio.

### Tinea Sycosis.

In the treatment of this condition, the same author, in the *Hot Springs Med. Jour.*, states that in order to bring about a cure daily local applications of some anti-parasitic remedy are all that is required. Constitutional remedies are not absolutely necessary. A 10 per cent. ointment of the oleate of mercury is applied twice daily. This at once lessens the infiltration and induration of the parts and destroys the parasite. To prevent extension of the infection a 10 per cent. solution of thymol in olive oil should be rubbed in over the entire bearded surface.

The prognosis in this condition is always favorable, but the time required to effect a cure varies considerably. In some cases the simplest measures suffice, while in others months may elapse before the disease is eradicated. Occasionally the disease may terminate in spontaneous recovery, but as a general rule if untreated it assumes a chronic form and persists for years.

### Coryza.

This complaint occurs most frequently in the spring and autumn months, though to some extent it is always with us and is one of the most common conditions which we have to treat. The disease is probably caused by a micro-organism, though in some cases it seems to be caused by irritation as from the fumes of certain drugs or by dust.

E. S. McKee, in the *Therapeutic Gazette*, advises spraying the nose once daily with an alkaline and antiseptic solution, then with a 1 per cent. solution of cocain with 0.40 per cent. of boracic acid. Five minutes later he uses a 2 per cent. spray of antipyrin, and five minutes later insufflates with calomel; lastly, 1 per cent. of menthol in liquid petrolatum is sprayed into the nose.

Among a host of sprays for coryza he recommends the following:

℞. Menthol .....gr. viii |5
Camphoræ .....gr. v |3
Petrolati liq. .....fʒi 30

M. Sig.: Use as a spray.

℞. Adrenalin chlorid .....ʒi 4|
Cocain hydrochlorid.....gr. i |06
Salt solution (.8 per cent.).....fʒii 60|

M. Sig.: Use as a spray two or three times daily.

The patient should lie down for a few minutes after using this spray and should remain indoors for some time afterward.

[The cocain spray should only be used or dispensed by the physician. The patient should not be given a prescription. —ED.].

℞. Sodii salicylatis
Sodii chloridi
Sodii bicarbonatis, āā, q. s.....ʒiii 100|

M. Sig.: A teaspoonful in one-half pint of water and use as a spray.

℞. Hydrogenii peroxidi .....fʒi 30|
Hydrargyri chloridi corrosivi.....gr. i |06
Zinci sulphocarbolatis.....gr. xx 1|33
Aquæ dest.....fʒv 148|

M. Sig.: Use as a spray after cleansing.

As a stimulant to the mucous membranes the following may be used:

℞. Thymol .....gr. 1/3 |02
Olei carophylli.....m. iii |19
Petrolati liq. .....fʒi 30|

M. Sig.: To be sprayed in the nares two or three times a day.

℞. Phenol (acidi carbolici)
Menthol
Olei gaultheriæ, āā.....gr. i |06
Petrolati liq. .....fʒi 30|

M. Sig.: Use as a spray three or four times a day when an antiseptic is needed.

As a sedative the following may be used:

℞. Olei carophylli.....m. viii |50
Terebeni .....m. xii |70
Petrolati liq. .....fʒi 30|

M. Sig.: Use as a spray.

℞. Olei cassiæ.....m. ii |13
Menthol .....m. iii |19
Petrolati liq. .....fʒi 30|

M. Sig.: Use as a spray.

Snuffing of liquids of an alkaline and antiseptic character is often beneficial. McKee recommends the following simple alkaline and antiseptic wash which can be made up at home: Salt, one-half teaspoonful; carbonate of soda, one teaspoonful; phenol (carbolic acid), 10 drops; water, one pint. This is best used lukewarm, the patient stooping over, snuffing it through the nose and spitting it out of the mouth. If snuffed through the nose in the erect posture or with the head thrown backward there is danger of the solution passing through the Eustachian tubes into the ear and causing trouble. These alkaline solutions, if used regularly in flushing out the nares, are very beneficial in preventing coryza.

Another consists of equal parts of salt, borax and bicarbonate of soda, one teaspoonful to a pint of water, use lukewarm.

Hare's "Practical Therapeutics" states that camphor may be inhaled or taken internally in the early stages of cold in the head, with great relief, and that it exercises a decided influence in aborting an attack. The following formula may be employed:

℞. Camphoræ
Quininæ sulphatis, āā.....gr. ii |12
Fluidextracti belladonnæ.....m. iss |09

Ft. tabellæ No. x. Sig.: One tablet every hour for four or five doses.

After the attack is well developed this is useless, but used early it will decrease the frontal headache, the sneezing and running at the nose.

This author asserts that much benefit follows the use of sodium bicarbonate in 30-grain (2.0) doses every two hours for three doses. He also states that a hot footbath with mustard in it, and the taking of a hot drink, such as lemonade, with or without whisky, on going to bed, are useful. Often 20 or 30 minims (1.3-2.0) of sweet spirits of nitre added to this drink will increase its diuretic effect. In other cases, particularly in strong, healthy men, from 5 to 10 grains of Dover's powder at bedtime will be found more efficacious.

## Medicolegal

### Statements Made to Physician by Injured Person.

The Supreme Court of Alabama says, on the appeal of Gregory vs. State, a homicide case, that as to statements made to a physician by the party who is the subject of the injury, the rule of exclusion extends as to declarations of its cause, or the way in which it occurred; these being regarded as mere narratives of past events, which must be proved by other and independent evidence. But, from the necessity of the case, he may testify to the party's statements as to his symptoms, the locality and character of the pain, and give an explanation of his bodily condition, made while suffering, and for the purpose of enabling the physician to form an opinion of the nature and extent of the injury. There was no error in permitting the physician to state what the deceased said during the examination as to his stomach and legs, namely, that he had no feeling in feet or legs, and had burning in the stomach.

### Evidence and Damages in Case of Femoral Hernia.

The Supreme Court of Washington says that the personal injury case of Hodd vs. City of Tacoma was brought to recover damages for personal injuries alleged to have been sustained by falling on a defective sidewalk. Almost immediately after the accident the plaintiff was removed to a hospital and subjected to an exploratory surgical operation for inguinal hernia. A few weeks later it was discovered that she was suffering from a femoral hernia, requiring a second operation, which was then performed. It was not seriously disputed that the first operation was performed immediately after the accident, that the plaintiff was confined in the hospital for six weeks thereafter, and that as soon as she attempted to stand on her feet it became apparent that a second operation for femoral hernia was necessary. The plaintiff claimed perfect health prior to the accident. The court holds that there was no error, under all the circumstances of the case, in permitting one of the attending surgeons, over objection, to testify that, in his opinion, the hernia last mentioned might have resulted from the plaintiff's fall on the sidewalk. It also holds that a judgment for $5,000 damages was not excessive, or to be disturbed, inasmuch as the plaintiff's physicians gave testimony tending to show that some of her injuries were permanent, the testimony of her physicians standing without substantial dispute, while the defendant did not ask for the appointment of any commission of physicians to examine the plaintiff and report on her condition.

### Photographs of Portions of Human Body as Evidence.

The Supreme Judicial Court of Massachusetts says that in the personal injury case of McKarren vs. Boston & Northern Street Railway Company, during the testimony of the physician who attended the plaintiff, in describing the nature and extent of the enlargement of a portion of the vertebra of her spine, photographs of this portion of the back were introduced and used by him as illustrations. While the photographer was not called, the witness, whose medical qualifications were not questioned, testified that the photographs were taken in his presence, and under his direction, and on admission they must be considered as forming a part of his evidence. Alberti vs. New York, Lake Erie & Western R. R. Co., 118 N. Y. 77, 88.

The competency of such evidence if relevant, whether consisting of a model, diagram, map, plan, picture or photograph, is established, and is admitted for the purpose of giving to the jury a representation of the object or subject concerning which the inquiry is made, and to enable them better to understand the issues on trial. Blair vs. Pelham, 118 Mass. 420, 421. Before admission, however, there must be a verification of the accuracy of the representation, and this is a preliminary inquiry to be made by the presiding judge whose decision is final. Clapp vs. Norton, 106 Mass. 33; and other cases.

The defendant placed great reliance on Cunningham vs. Fair Haven & Westville R. R. Co., 72 Conn., 244, as an authority establishing a different rule, but after discussing the weight to be given such a finding the court expressly says: "We are not now called on to determine the legal correctness of a finding of this kind, or whether it can be reviewed. The question presented by the record is whether it was error to admit this photograph without any evidence of its accuracy."

Again, the defendant contended that a higher degree of verification was necessary and should have been required than when the representation describes inanimate objects, as the accuracy of the reproduction of the animate human form varies according to the position and adjustment of the camera, the skill of the artist and condition of the atmosphere. It is undoubtedly true that the photographer may produce a picture which is misleading when compared with the subject represented, but so can the civil or mechanical engineer by his plan, drawing or model made by hand, and while such misrepresentation may result from lack of professional skill, or proper adjustment of the photographic apparatus, it also may be the deliberate product of the most skilful exercise of the art.

This ground of possible deception when the human form is either wholly or partially portrayed was not, however, recognized as a distinction in Deforge vs. New York, New Haven & Hartford R. R. Co., 178 Mass. 59, where a radiograph of a fractured human foot, if properly taken, was held to be admissible when verified in the usual manner, while in Com. vs. Campbell, 155 Mass. 537, and in Com. vs. Morgan, 159 Mass. 375, on the question of identity, a photograph showing the defendant's personal appearance was held to have been properly admitted. In each of these cases physical characteristics were depicted, and if admissible to show the appearance of one part of the human body there would seem to be no sufficient reason why a photograph of other parts, when relevant, and properly verified, should be excluded.

The testimony of the photographer was not required if the judge was satisfied by other evidence, as he apparently was, that they were substantially accurate representations of the plaintiff's person. Com. vs. Morgan; above cited; Van Houten vs. Morse, 162 Mass. 414; Archer vs. N. Y., N. H. & H. R. R. Co., 106 N. Y. 589; McGar vs. Borough of Bristol, 71 Conn. 652.

## Current Medical Literature

### AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

#### Medical Record, New York.

*April 20.*

1 *Refraction Changes Dependent on Glycosuria. G. M. Gould, Philadelphia.
2 *Unusual Results of Intrathoracic Compression. T. B. Barringer, Jr., New York.
3 Dermatologic Transitions. O. M. Wilson, Ottawa, Canada.
4 Criminal Aspect of Venereal Diseases in Children. W. T. Gibb, New York.
5 *Treatment of Tuberculosis in Arizona. I. A. Brewer, Fort Huachuca, Ariz.
6 The Stomach Tube in Diagnosis. N. B. Foster, New York.
7 Unsuccessful Operation for Intestinal Obstruction on a Child of Fifty-five Hours. H. Crutcher, Mexico, Mo.

1. **Refraction Changes Dependent on Glycosuria.**—Gould reports a case of refractive changes due to glycosuria observed by him, and also the histories of 22 cases observed by others that have been published. He says that eyestrain may have aided in producing the functional, dietetic and nutritional disease called glycosuria; that the majority of cases are in presbyopes; that eyestrain and glycosuria form a vicious circle; that warnings given by refraction changes should lead to immediate treatment of early and curable cases of glycosuria to prevent the later organic changes in the ocular structures.

2. **Unusual Results of Intrathoracic Compression.**—Barringer reports three cases of collateral venous circulations of unusual extent, following thrombosis and compression of the superior vena cava and left innominate vein, and an uncommon physical sign of bronchial compression. This sign consisted of a hyper-resonant or tympanitic note over the stenosed bronchus.

5. **Treatment of Tuberculosis in Arizona.**—Brewer makes a plea for more care in selecting tuberculous cases to be sent to

Arizona, and urges that only such patients be sent as have means to secure proper food and comforts. He gives a concise statement of the advantages and possibilities of the different health resorts of the state.

### New York Medical Journal.

*April 20.*

8 *Seven Cases of Appendicitis. J. A. Wyeth, New York.
9 Street Dirt and Public Health. W. G. Thompson, New York.
10 *Treatment of Typhoid Spine. V. P. Gibney, New York.
11 Pathology of Function. An Experimental Laboratory Course. H. Emerson, New York.
12 Recent Investigations in Syphilis and Their Practical Application. B. Lapowski, New York.
13 Pasteurization—Its Advantages and Disadvantages to the Municipality. J. Roby, Rochester, N. Y.
14 *Modified Buttermilk in Infant Feeding. C. F. Judson and R. O. Clock, Philadelphia.
15 Tuberculous Peritonitis, with Report of Cases. E. Novak, Baltimore.

**8. Appendicitis.**—Wyeth reports seven cases to emphasize the great danger in delaying surgical intervention in typical cases of appendicitis, and in all cases of recurring, though mild, attacks.

**10. Treatment of Typhoid Spine.**—Gibney insists on the use of the Paquelin cautery as a regular line of treatment so long as tenderness and pain on movement exist. He says that even after all tenderness subsides it is a good plan to employ the cautery occasionally, once a week, or once in two weeks. The administration of hypnotics should be left to the individual practitioner.

**14. Modified Buttermilk in Infant Feeding.**—Judson and Clock fed 12 infants suffering from malnutrition and enteritis on modified buttermilk, with excellent results. The longest period of continuous feeding on buttermilk was six weeks.

In preparing the buttermilk for these cases two deviations were made from the usual method. The casein was diluted considerably to make the proportion present from 1.5 to 2 per cent., and the sugar added only in sufficient amounts to bring the proportion present in the mixture up to 5 per cent. Moreover, the mixture was not brought to the boiling point, but heated only to from 140 to 155 F. for ten minutes, so that the lactic acid bacteria were not destroyed. Robinson's barley flour was added instead of wheat flour, one-half ounce to each pint and a half, and cane sugar solution (6 and 9 per cent. strength) was used to dilute the casein.

The method of preparation of the weaker mixture was as follows: Ingredients used were one pint of buttermilk, eight ounces of a 6 or 9 per cent. solution of cane sugar, one-half ounce of Robinson's barley flour. 1. Make a paste of the flour and a small quantity of the sugar solution. 2. Add buttermilk and the remainder of the sugar solution to this paste and mix thoroughly. 3. Heat the mixture to 155 F. for 10 to 15 minutes, stirring constantly. 4. Remove from stove, cool, and place on ice.

In feeding the infants on buttermilk the principle followed was to begin with a moderately strong mixture, which they called "two-thirds" mixture, containing from 1 to 1.5 per cent. fat, from 4 to 5 per cent. sugar, and from 1.5 to 1.75 per cent. proteid. After tolerance for this mixture had been established, as evidenced by normal temperature and good condition of the stools, the fat percentage was increased. If the infant's digestion still remained good, the formula was increased to "three-fourths" mixture with a simultaneous increase in the fat percentage. The three-fourths mixture contained from 1.5 to 2.5 per cent. fat, 5 per cent. sugar, and from 1.75 to 2 per cent. proteid.

### Boston Medical and Surgical Journal.

*April 18.*

16 Diseases of the Nasopharynx in Infancy. J. L. Morse, Boston.
17 Surgical Aspects of Empyema. F. B. Lund, Boston.
18 Empyema from the Physician's Standpoint. H. F. Vickery, Boston.
19 *Periductal Myxoma of the Breast. W. P. Graves, Boston.
20 *Intrapleural Injections of Formalin in Pleurisy with Effusion. L. D. Chapin, Springfield, Mass.

**19. Myxoma of Breast.**—In the case reported by Graves the tumor was so large and cumbersome that the patient, when sitting down, was obliged to rest it on a table or on the arm of a chair. The patient was only 38 years old and the tumor, which weighed 16½ pounds, was first noticed three years previously. It was entirely discrete and was removed easily. During the last two or three months the tumor grew very rapidly, due to a sarcomatous metaplasia.

**20. Pleurisy with Effusion.**—Chapin reports a case of pleurisy with effusion, in which he injected intrapleurally a 2 per cent. formalin solution in glycerin. Only one injection was made, but it resulted in a cure. Other treatment, which had been employed previously, did not prevent a reaccumulation of the fluid so that repeated tappings were necessary.

### Lancet-Clinic, Cincinnati.

*April 20.*

21 Deafness: Its Differential Diagnosis and Prognosis. B. L. W. Floyd, Evansville, Ind.
22 Acute Intestinal Obstruction. M. A. Tate, Cincinnati.
23 *Varicose Veins of the Tongue. R. H. Johnston, Baltimore.
24 Gallstone. W. C. Abbott, Chicago.
25 The Medical Expert and His Trials. E. S. McKee, Cincinnati.

**23. Varicose Veins of Tongue.**—Johnston reports the case of a woman, 64 years old, who had suffered much from throat trouble, cough and shortness of breath. On examination he found on both borders of the tongue, beginning at the anterior pillars, and extending forward to within half an inch of the tips, bluish, tortuous masses, round, and measuring about 4 mm. in diameter. The ranine veins on the under surface of the tongue were unusually large and tortuous. The condition had caused no inconvenience and no cause for its presence was discoverable. There were no signs of congestion in the throat. Johnston is inclined to believe that the enlarged veins were of congenital origin.

### St. Louis Medical Review.

*April 13.*

26 Opsonic Treatment of Bacterial Diseases. O. H. Brown, St. Louis.
27 Spirochæta Pallida and Syphilis. C. Fisch, St. Louis.
28 Tertiary Manifestations of Syphilis. R. H. Davis, St. Louis.
29 Professor Ernst von Bergmann. H. Tuholske, St. Louis.

### Journal of Experimental Medicine, New York.

*March.*

30 *Biology of Diplococcus Intracellularis. S. Flexner, New York.
31 *Experimental Cerebrospinal Meningitis in Monkeys. S. Flexner, New York.
32 *Serum Therapy for Experimental Infection with Diplococcus Intracellularis. S. Flexner, New York.
33 Bacteriology of Rheumatic Fever. J. M. Beattie, Edinburgh, Scotland.
34 Leucoprotease and Anti-leucoprotease of Mammals and Birds. E. L. Opie and B. I. Barker, New York.
35 Electrical Charge of Native Proteins and the Agglutinins. C. W. Field and O. Teague, New York.
36 *Heterotransplantation of Blood Vessels Preserved in Cold Storage. A. Carrel, New York.
37 Nuclein Metabolism in a Dog with Eck's Fistula. J. E. Sweet and P. A. Levene, New York.

**30. Biology of Diplococcus Intracellularis.**—During the 1904-5 epidemic of cerebrospinal meningitis in New York, Flexner, as a member of a commission appointed by the health department of New York for the investigation of the disease, made an exhaustive study of the pathogenic properties of *Diplococcus intracellularis*. The brief vitality of this organism on artificial media is not due to exhaustion of the medium or to accumulation of products except, perhaps, when in large quantities. When suspended in salt solution the cocci rapidly die. Not only is the solution fatal, but they soon lose their staining properties and disintegrate. He finds, too, that cold is injurious, a temperature just above zero being quickly fatal. In the cold, disintegration, however, is less rapid. Hence it is concluded that disintegration is the result of enzyme action. The diplococcus lives much longer in medium to which some calcium has been added or in Ringer's solution. This shows that the brief viability in salt solution is not due to hypertonicity of the medium, to starvation alone, or to a natural brief period of vitality, but that sodium chlorid is distinctly poisonous to the diplococcus; and this poisonous action is at least partly offset by other salts. The enzyme in question is intracellular and is liberated by the death of the cell. It is not destroyed at 60 C., at which temperature the organism is killed, but at 65 C., and at higher temperature its activity is much reduced. It acts alike in sodium chlorid and in Ringer's solution, but potassium cyanid inhibits its power of causing disintegration of the cell; if the potassium cyanid is subsequently removed autolysis proceeds again. The enzyme is not specific, but causes disintegration of many other varieties of bacteria, both Gram and non-Gram staining, the latter more easily than the

former. The author concludes that the autolytic and proteolytic ferments are independent since the diplococcus produces no proteolytic ferment, and the autolytic ferment in certain organisms as pyocyaneus, which produces marked proteolysin, is very slightly autolytic.

Strains of the diplococcus of meningitis vary much in their pathogenic properties, the freshly isolated ones being on the whole much more virulent than those under artificial cultivation for a time. Some strains remain virulent for a few days, others for months. When the virulence is once lost it can not be restored by animal passage. When comparatively small quantities are injected into guinea-pigs intraperitoneally, death usually results in less than 24 hours. The autolysates (autolyzed fluids) also are toxic, even if centrifugated, and if filtered through porcelain. The toxicity is not reduced at 65 C., and hence the toxic body and the enzyme are independent since the latter is appreciably affected at this temperature. The death of the animals is produced by the toxin liberated by the disintegration of the bacterial cell and not by extracellular poison.

31. **Experimental Cerebrospinal Meningitis.**—In the lower monkeys Flexner was able to produce an acute inflammatory condition of the meninges which resembles very closely the lesions produced by the *Diplococcus intracellularis* in man. The organisms obtained from typical cases of epidemic cerebrospinal meningitis were introduced directly into the spinal canal of monkeys by means of lumbar puncture. In the course of a few hours the animals became ill with certain characteristic symptoms and in a number of animals death took place in from one to three days. The lesions found at autopsy very closely simulate those occurring in man. In both are found encephalitis, acute endarteritis, inflammation of the dorsal ganglia, internal hydrocephalus, fibrinous and other thrombi, relatively small amount of fibrin in the exudates, phagocytosis of diplococci. The inflammation extends in monkeys into the membranes covering the olfactory lobes and into the ethmoid plate and nasal mucosa. The latter was often found inflamed, and smears from its surface showed cocci having many of the characteristics of the *Diplococcus intracellularis*. In none of the cases was it possible to cultivate the meningococcus, but this was probably due to its brief viability in the nose of the monkey. This olfactory inflammation is important because it shows that the localization of the exudate at the base of the brain is not necessarily produced by the infection arising from the nasal mucosa as has been assumed in human infections.

The degree of susceptibility of the monkey is very slight compared with that of man, because the amount of culture necessary to produce symptoms or to cause death is enormous compared with the probable amount necessary to cause the disease in man. The amount injected into the canal in these experiments varied from two loops of a fresh culture to several cultures. Flexner believes that the actual multiplication of the diplococci, except possibly in the abscesses, is very small; in some cases there is none at all. This is in marked contrast to what occurs in man. Injections of enormous quantities of the diplococcus intravenously or into other tissues of the body produce practically no symptoms, except a slight local tenderness and swelling.

32. **Serum Therapy for Experimental Diplococcus Infection.**—Flexner concludes from experiments that while various agents as normal and immune sera and even bouillon may affect favorably the course of an experimental infection, immune serum possesses the highest protecting power. The outlook is not especially encouraging, however, since the infection in the animals used is so rapidly fatal. Two monkeys were immunized against the diplococcus by successive injections for a period of nine months. The animals were bled to death, the sera collected and its immune properties tested by injection into the spinal canal of monkeys simultaneously with cultures of diplobacilli and also after a period of six hours. The results show that monkeys injected simultaneously with serum and culture in this manner may be prevented from developing severe symptoms; by separate injections of the culture and six hours later of the serum, the monkey, already ill, could be saved apparently from certain death.

The normal monkey serum also has some protective power when employed in certain cases. In other cases the mixture of serum and diplococci served to hasten the fatal outcome. No attempt is made to apply these results to human beings affected with meningitis. The results on the whole were not constant or striking enough to warrant great expectations. Possibly the more protracted course in man as compared with that in the inoculated animals may be a favorable condition, and by treatment with appropriate antisera, at the proper time, more encouraging results might be obtained. The protective power of normal serum might also be taken advantage of, in cases of human infection, by intraspinal inoculation.

36. **Heterotransplantation of Blood Vessels.**—Carrel's experiments show that blood vessels transplanted from dog to cat act as arteries for 77 days at least; and that having spent several days in cold storage does not interfere with their ordinary functions. The animals operated on must, however, be kept under observation for several months, or, indeed, for several years, before any conclusion can be drawn concerning the practicability of this method of preservation and heterotransplantation of blood vessels.

**American Medicine, Philadelphia.**
*March.*

38 *Choice of Ligature and Suture Material in Surgery of Peritoneum. H. G. Wetherill, Denver.
39 *Sixty-eight Consecutive Laparotomies for Pyosalpinx without a Death. C. E. McGirk, Philipsburg, Pa.
40 Ventrosuspension. H. D. Beyea, Philadelphia.
41 *Autotoxemia. J. C. Warbrick, Chicago.
42 *Gastroptosis, with Special Reference to Its Treatment. J. J. Gilbride, Philadelphia.
43 *Diagnosis of Cardiac Disease. R. J. Behan, Pittsburg, Pa.
44 *Vincent's Angina. J. D. Blackwood, Jr., Philadelphia.
45 *Electricity in Treatment of Rheumatism. A. R. Rainear, Philadelphia.
46 Trypanosomiasis in Portuguese Southwest Africa. F. C. Wellman, Angola, West Africa.

38.—See abstract in THE JOURNAL, Jan. 13, 1906, page 146.

39. **Pyosalpinx.**—Double salpingectomy was done by McGirk in 36 cases and single salpingectomy in 32 cases. Appendectomy was done at the time of operation in 17 cases.

41. **Autotoxemia.**—Warbrick reports seven cases of autotoxemia to illustrate his contention that the condition is one which may be mistaken for indigestion, dyspepsia, anemia, malnutrition, etc.

42.—See abstract in THE JOURNAL, Oct. 20, 1906, page 1322.

43. **Cardiac Disease.**—Behan disclaims against pronouncing a case one of heart disease without attempting to make a more specific diagnosis. He reviews briefly the pathognomonic signs, which are an aid in diagnosis.

44. **Vincent's Angina.**—Blackwood reports nine cases of Vincent's angina, occurring in children ranging in age from 2 to 10 years. Of these nine cases, ten were of the superficial or mild diphtheroid type, and two were in healthy children, smears from whose throats showed the presence of *Bacillus fusiformis* in one instance, associated with the spirillum. The seat of the attack was the lips, tongue, gums, cheeks, tonsils or pharynx, and in none was there marked destruction of tissue. There was no glandular enlargement in any case.

45. **Electricity in Rheumatism.**—Rainear reports three cases of rheumatism in which he employed the continuous current successfully.

**American Journal of Obstetrics, New York.**
*March.*

47 *Clinical Significance of Urinary Nitrogen. Metabolism in Toxemia of Pregnancy. J. Ewing and C. G. L. Wolf, New York.
48 *Gonorrhea in Women. G. L. Hunner, Baltimore.
49 *Case of Malignant Teratoma of Ovary. R. T. Frank, New York.
50 *Should the Ovaries be Removed when Hysterectomy or Removal of Body of the Uterus is Done? J. W. Bovée, Washington, D. C.
51 Report of the Gynecologic Service in the Georgetown University Hospital from Its Opening until the Present Time. J. T. Johnson, Washington, D. C.
52 *Etiology of Endometritis. L. A. Ewald, New York.
53 Symptoms and Clinical Course of Endometritis. J. O. Polak, Brooklyn, N. Y.
54 Treatment of Endometritis. R. Waldo, New York.

47. **Urinary Nitrogen in Toxemia of Pregnancy.**—According to Ewing and Wolf, the study of the urinary nitrogen furnishes a new and fundamental point of view as to the causa-

tion of toxemia of pregnancy, which must be tested carefully, not with the idea of displacing other criteria, but with a view of supplementing them with information of a more precise character. The results of their observations lead them to believe that the urinary nitrogen may have the following practical applications in pregnancy: It may determine the existence and gravity of a toxic condition. In urgent cases it may be relied on with some caution to determine the safest treatment. It frequently establishes the trifling importance of symptoms referable to transitory gastric disorders. It may indicate an abnormal state of metabolism when other symptoms are absent, and thus form the basis of treatment designed to avoid some of the serious complications of pregnancy. It is of great value in determining the true condition of the patient in the pre-eclamptic state, and in distinguishing between simple chronic nephritis and impending eclampsia. It is an excellent guide in determining the progress of convalescence. It is not to be relied on exclusively, however, and more than any other set of the phenomena of the disease, but only in connection with all the data in the case.

48. **Gonorrhea in Women.**—Hunner discusses the lower genital tract infections, the urinary tract infections, the upper genital tract infections and peritoneal infection.

49. **Teratoma of Ovary.**—Frank's patient, aged 35 years, mother of one child, gave a good family history and in her personal history there was no evidence of illness, tumors or multiple pregnancies. The patient had always experienced what she termed a weak feeling in the right side, which manifested itself in weight, discomfort, and a dragging sensation, after even moderate exertion, such as walking. In September, 1898, she struck the right side of her abdomen against the edge of a table and soon after symptoms suggestive of appendicitis manifested themselves. The acute symptoms gradually subsided, but there appeared a gradual loss of strength, an increase of constipation and a slight rise of the evening temperature. Finally, a diagnosis was made of tumor, probably malignant, and operation was advised.

On opening the peritoneal cavity the greatly distended intestines crowded through the wound. Immediately behind the bowel an immense yellowish tumor presented, consisting of nodular, very friable masses, and large festoons of fluctuating, thin-walled cysts of various sizes grouped in grape-like clusters. The mass was everywhere adherent. On the peritoneum were lumps and nodules not connected with the main mass. The most accessible parts of the growths were severed between ligatures, great difficulty being experienced in removing a sufficient amount to permit of closing the abdomen. The patient's condition remained the same as before operation. She became progressively worse and died three months afterward. There was no autopsy. Microscopic examination of the tumor showed a teratoma in which all three fetal layers were well represented. There were present skin, with its appendages, nervous tissue, cysts lined with unclassifiable epithelium, bone, cartilage, connective tissue, unstriped muscle, analogues of the embryonal intestine and acinous glands. The active stage of the disease extended over about seven months, death resulting from general inanition.

50. **Removal of Ovaries.**—Bovée summarizes his paper as follows: 1. The existence of an ovarian secretion has not been proved and therefore should not act as a bar to oöphorectomy. 2. In all cases of removal of the uterus or its body for disease in women of more than 40 years the ovaries would best be removed. 3. As 5 per cent. of malignancy exists in the cases of uterine fibroids brought to operation, and in 30 per cent. marked complications of the appendages are present, leaving the ovaries when the uterus or its body is removed for such condition is hazardous to the future well-being of the patient. 4. In malignant disease of the uterus in which radical surgery is indicated removal of both ovaries is imperative. 5. The indications for removal of the ovaries when partial or complete hysterectomy is done are increasing instead of diminishing. 6. When ovarian growths of a bilateral nature complicate the hysterectomy both ovaries should be removed, though one seems normal.

52. **Etiology of Endometritis.**—Ewald presents a general review of this subject, but presents nothing new.

### Journal of the Medical Society of New Jersey, Orange.

*March.*

55 *Plea for Use of United States Pharmacopeia and Standard Pharmaceuticals vs. Proprietaries. H. H. Sherk, Camden.
56 Extrauterine Pregnancy Occurring in Same Individual at Five Months' Interval. A. T. Bristow, Brooklyn, N. Y.
57 Tuberculosis. G. K. Dickinson, Jersey City.
58 *Is the State Medical Examining Board a Success? J. R. Stevenson, Haddonfield.

55. **Plea for Use of Standard Pharmaceuticals.**—Sherk discusses this subject from the same standpoint as that taken by other writers with whom he agrees as to the cause of the indiscriminate use of non-official remedies and how to encourage the use of standard preparations.

58. **Is State Medical Examining Board a Success?**—Stevenson says that experience tends to impress on us the view that no board composed of physicians only can prevent the people from looking on them with a suspicion of interestedness. The paper rather conveys the impression that state boards and medical examiners are not as great a success as most people are inclined to believe.

### California State Journal of Medicine, San Francisco.

*March.*

59 Present Status of Intranasal Surgery. L. C. Deane, San Francisco.
60 Case of Acute Fatal Pancreatitis. J. W. Jones and J. M. Burlew, Santa Ana.
61 *Practical Point in Instrumental Diagnosis. C. M. Cooper, San Francisco.
62 Diagnosis and Treatment of Extrauterine Pregnancy. G. B. Somers, San Francisco.
63 European Clinics. E. C. Sewall, San Francisco.
64 *Laboratory Methods of Diagnosis in Typhoid. H. W. Allen, San Francisco.
65 Treatment of a Few Diseases of the Rectum, by General Practitioner. I. C. Young, St. Louis, Mo.
66 *Reports of Focal Operations in Hip-joint Tuberculosis. H. M. Sherman, San Francisco.
67 Effect of Roentgen Rays on Epithelial Structure of Skin. D. W. Montgomery, San Francisco.
68 *Treatment of Pyelitis and Urethritis by Urethral Catheterization and Lavage. G. L. Eaton, San Francisco.

61. **Instrumental Diagnosis.**—Cooper cites an instance which emphasizes the necessity of injecting a little sterile water into a catheter or any other tube which is perforated before the tube is withdrawn so as to force away from the eyelet the mucous membrane, which otherwise might be torn off and brought away with the tube. When the proctoscope is used air instead of water may be injected.

64. **Laboratory Methods in Diagnosis of Typhoid.**—Allen discusses briefly the various methods that are of value in diagnosing suspected cases of typhoid, such as blood cultures, serum diagnosis, and the leucocyte count.

66. **Focal Operations in Hip Joint Tuberculosis.**—Sherman says that the possibility of health from an operation directed against the diseased focus in the hip should be considered and discussed very carefully, and that this must always be done with one thought clearly kept in mind, that a tuberculous bone lesion is practically always more serious and more extensive than outside evidences lead one to believe. He has done the tunneling operation five times, but in only one case was it apparent that the operation could have been a success.

68. **Catheterization and Lavage in Pyelitis and Ureteritis.**—Eaton reports the history, urinary analysis and treatment in 23 cases of pyelitis and ureteritis, 8 bilateral and 15 unilateral. The treatment consisted of passing the ureteral catheter every third or fourth day and injecting into the pelvis of the kidney about 5 c.c. of a 2 per cent. silver salt solution. Marked improvement resulted in each case. Eaton emphasizes the necessity for a careful examination of the urine previous to and during the treatment.

### Journal of the New Mexico Medical Association.

*March 15.*

69 Benefit of Climate in Cure of Tuberculosis. D. H. Carns, Albuquerque.
70 Circulatory, Respiratory and Vasomotor Stimulants. W. H. Burr, Gallup.
71 Adenoids. C. S. Losey, Las Vegas.
72 The Sympathetic Nervous System. F. Palmer, Cerrillos.
73 Management of Pregnancy. R. E. McBride, Las Cruces.

### American Quarterly of Roentgenology, Pittsburg.
*October.*

74 *Teaching of Roentgenology in Medical Colleges. V. J. Willey, Detroit, Mich.
75 *Roentgen Rays in Treatment of Acne, Acne Rosacea, Eczema and Psoriasis. A. P. Biddle, Detroit, Mich.

74, 75.—See THE JOURNAL, Sept. 15, 1906, pages 887-8.

### Montreal Medical Journal.
*March.*

76 Perforation in Typhoid. A. McPhedran, Toronto.
77 Appendicitis. J. B. Harvie, Troy, N. Y.
78 Cervical Ribs Causing Pressure of Brachial Plexus. C. K. Russel, Montreal.
79 Partial Gastrectomy for Pyloric Cancer. A. E. Garrow and C. A. Peters.
80 Koch-Weeks Conjunctivitis. H. McKee, Montreal.
81 Clinical Notes from Alexandria Hospital. J. C. Fyshe and A. W. Hunter.

### Archives of Otology, New York.
*December.*

82 Case of Bilateral Cerebral Disturbance of Hearing with Aphasia. G. Boenninghaus, Breslau, Germany.
83 So-called Cyclic Course of Acute Otitis Media. O. Koerner.
84 Exostoses and Hyperostoses of Ear Canal as Cause for Severe Purulent Otitis. Dr. Meyer, Hanover.
85 Herpes of the Auricle with Neuritis of the Facial Nerve. T. Sarai, Japan.
86 Purulent Meningitis Following Radical Mastoid Operation. R. J. Held and S. J. Kopetzky, New York.
87 Acute Sepsis Beginning on the Third Day of an Attack of Acute Middle Ear Inflammation. J. Dunn, Richmond, Va.
88 Differential Diagnosis in Otitic Sinus Thrombosis. F. Voss, Riga.

### Texas Medical News, Austin.
*January.*

89 Latent Gonorrhea. M. B. Saunders, Waco.
90 Puerperal Embolism. C. A. Gray, Bonham.
91 Abscess of Lungs; Operation J. B. Stinson, Sherman.
92 Hematuria. J. L. Rountree, Argo.
93 Internal Medicine vs. Surgery. W. F. West, Waxahachie.

### Iowa Medical Journal, Des Moines.
*March 15.*

94 Is Mental Effort of Therapeutic Value? F. T. Seybert, Council Bluffs.
95 Normal and Perverted Carbohydrate Metabolism. J. C. Ohlmacher, Independence.
96 Carcinoma. A. B. Bowen, Maquoketa.
97 Diphtheria and Its Treatment. A. P. Stoner, Des Moines.
98 Functions of the Peritoneum. P. B. McLaughlin, Sioux City.
99 Case of Brain Injury. P. T. Geyerman, Worthington, Minn.
100 President's Address of Harrison County (Iowa) M. S. T. Macfarlane, Mondamin.
101 Medical Treatment of Epithelioma. W. R. Bollbaugh, Osceola.

### Medical Library and Historical Journal, Brooklyn.
*December.*

102 The Mondino Myth. L. S. Pilcher, Brooklyn.
103 Lessons from Life of Major Walter Reed. H. A. Kelly, Baltimore.
104 Leonardo Da Vinci and Vesalius. J. P. McMurrich, Ann Arbor, Mich.
105 Joseph Roby, the Anatomist. E. F. Cordell, Baltimore.
106 Biography of François Magendie. (Continued.) P. M. Dawson, Baltimore.

## FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

### British Medical Journal, London.
*April 6.*

1 *Lord Lister and the Evolution of Wound Treatment During the Last Forty Years. H. C. Cameron.
2 *Dr. H. Jackson's Views of Functions of the Cerebellum. V. Horsley.
3 *Iodin-Spirit Catgut. J. S. Riddell.

**1. Evolution of Wound Treatment.**—Among the points considered by Cameron in his discussion of the evolution of wound treatment are the following: Acupressure; earliest form of antiseptic treatment; the buried ligature; the introduction of protective and shellac plasters, and of antiseptic gauze; the antiseptic spray; the employment of drainage tubes; mercurial gauze dressings; antisepsis by heat; sterilization of the skin, hands and instruments; the treatment of compound fractures and of chronic abscesses associated with osseous caries.

**2. Functions of Cerebellum.**—Horsley's conclusion is that all research tends to confirm the view held by ancient and modern investigators that the cerebellar cortex is the first chief station of representation of the afferent basis of movements of all the skeletal muscles.

**3. Iodin Spirit Catgut.**—As the result of two years of constant use of this catgut Riddell is convinced that it is sterile; that it loses none of its tensile strength in preparation; that it can be stored indefinitely in the solution in which it is prepared without becoming brittle; that it is soft and nice to handle; that it is readily and simply prepared and without any undue expense, and that it is absorbed completely but only after it has served its purpose.

### The Lancet, London.
*April 6.*

4 Pathology of Melanotic Growths in Relation to Their Operative Treatment. W. S. Handley.
5 Increase of Insanity. G. H. Savage.
6 *Area of "Acute Abdominal Conflux" and the "Incision of Incidence." C. P. Childe.
7 *Amyl Nitrite in Hemoptysis. G. A. Crace-Calvert.
8 Aseptic and Septic Midwifery in the Liverpool Workhouse Hospital. W. Alexander.
9 Multiple Circumscribed Lipomata Treated with Ethylate of Sodium. A. F. Savill.
10 Teaching of the Hygiene of the Expectant and Suckling Mother. J. F. J. Sykes.
11 Rôle of Blood Plasma in Disease. H. Campbell.

**6. Acute Abdominal Conflux.**—The area of acute abdominal conflux is described by Childe as being an area bordered by two lines in which almost every acute abdominal crisis either must or does occur. A perpendicular line is drawn from opposite the esophageal opening of the stomach, about one inch to the left of the sternum on the seventh costal cartilage, to Poupart's ligament. A second line is drawn from the right anterior superior iliac spine, perpendicularly upward to the lower border of the thorax. Between these two lines is the area of acute abdominal conflux. The incision which will lay bare this area is a vertical one midway between the lines, just about the outer border of the right rectus. This is the incision of incidence. It commences about the level of the umbilicus and continues downward. Childe claims that this incision exposes to sight that part of the abdominal cavity which in a large proportion of cases must contain the offending organ, and which in another large proportion of cases does, as a matter of fact, do so. When it fails to expose the offending organ the abdomen can be examined by touch just as well through the right semilunar as through the median incision.

**7. Amyl Nitrite in Hemoptysis.**—Crace-Calvert claims that nitrite of amyl is the most valuable drug in practically all cases of hemoptysis. It produces such an immediate fall in the general blood pressure, by dilatation of the vessels throughout the body, that the pressure at the bleeding point is lowered and there is time for clotting to take place, while the hemoptysis usually ceases almost instantly. The inhalation of three minims usually checks the bleeding almost at once.

### Journal of Obstetrics and Gynecology of the British Empire, London.
*April.*

12 *Chorea During Pregnancy. W. F. Shaw.
13 *Occasional Occurrence of Peculiarly Offensive Condition of Liquor Amnii. M. Handfield-Jones.
14 Technic of Operations on Uterine Appendages. H. Jellett.
15 *Four Cases of Early Ectopic Pregnancy. A. M. Sinclair.
16 New Method of Performing Ventrosuspension of the Uterus. A. M. Sinclair.
17 Rhythmic Chorea (Pseudochorea?) in Early Pregnancy. G. B. Marshall.
18 Hydatids (Acephalocysts) of the Abdomen and Pelvis, Removed by Abdominal Section. F. H. Champneys.
19 Multiple Fibromyomata of the Uterus, Curiously Similar in Character, in Mother and Daughter. H. Macnaughton-Jones.
20 *Effect of Pregnancy on Alopecia Areata. G. G. S. Taylor and R. W. Mackenna.

**12. Chorea During Pregnancy.**—Shaw reports 11 cases, in two of which the patients were treated on traditional lines with very poor results. The remaining nine patients were put on a milk diet and elimination was increased, as was first suggested by Fothergill, and the results obtained were satisfactory in every way.

**13. Infection of Liquor Amnii.**—Handfield-Jones found five instances of infection of the liquor amnii among 3,300 accouchements. The fluid is compared to an ordinary typhoid stool, and was extremely offensive in odor, the odor being of a fecal nature. It contained pus, blood, crystals of cholesterin and some columnar epithelium, bile-stained. It also contained many bacteria, mainly staphylococci and colon bacilli.

**15. Ventrosuspension of Uterus.**—Sinclair makes an opening through the anterior abdominal wall large enough to permit of a thorough inspection of the contents of the pelvis. The

displaced uterus is raised and any adhesions present are broken down. The ovaries are inspected and if any abnormality is noticed it is attended to. Beginning at the point where the left round ligament enters the abdominal wall, the ligament is stitched with strong catgut—not too thick—to a fold of peritoneum, and this is carried on as a continuous suture embracing the round ligament and stitching it to the parietal peritoneum until the uterus is reached. The suture is then tied. With another suture the right round ligament is stitched in the same way as the left until the uterus is reached. Then the suture is carried along the front of the uterus, suturing this organ also to the peritoneum, until the first suture is reached. In the process of stitching the round ligaments are shortened. Sinclair has performed this operation several times with good results. It does not interfere with or hamper the bladder.

20. **Effect of Pregnancy on Alopecia.**—Taylor and Mackenna report a case in which the growth of hair was stimulated during pregnancy, the alopecia returning with the termination of pregnancy.

### The Practitioner, London.

*April.*

21 *Treatment of Postpartum Hemorrhage. G. E. Herman.
22 The Myogenic Theory. J. Cowan.
23 Six Cases of Ruptured Ectopic Pregnancy. C. P. Childe.
24 Diseases of the Nervous System. H. C. Thomson.
25 Relationship Between Simple Posterior Basic Meningitis and Cerebrospinal Fever. F. Langmead.
26 What is Fever? W. Hutchinson.
27 Juvenile General Paralysis. C. H. Fennell.
28 *Value of Roentgen Rays in Medical Diagnosis. A. F. Hertz.
29 Use of Antipyrin as a Sedative in Some of the Common Disorders of Childhood. H. N. Fletcher.
30 Diseases of the Stomach. F. C. Moore.
31 Famous Quacks. J. Graham.

21. **Treatment of Postpartum Hemorrhage.**—Herman holds that the only effective treatment of postpartum hemorrhage is to bring about uterine contraction. He says that the great prophylactic against postpartum hemorrhage is to avoid entering the uterus when it is not contracted, and that the cure for a tired uterus is sleep. If the accoucher will give his patient opium to make her sleep, when she wakes uterine action will return, the child and placenta will be expelled, and hemorrhage in the third stage of labor will not be enough to cause anxiety.

28. **Value of Roentgen Ray in Medical Diagnosis.**—Hertz shows that in the Roentgen rays we have a means of extending our knowledge of diseases of the thorax and abdomen.

### Presse Médicale, Paris.

32 (XV, No. 18, pp. 137-144.) Surgical Treatment of Cancer of Uterine Cervix. (Cure chir. du cancer du col.) J. L. Faure.
33 Dangers of Carbolic Acid as Domestic Antiseptic. (Eau phéniquée.) L. M. Pautrier.
34 (No. 19, pp. 145-152.) *Spleen in Organic Heart Disease. (Rate dans les cardiopathies org.) E. Barlé.
35 Budin's Achievements in Puericulture. (Oeuvre de Budin.) V. Bué.
36 Syringe for Injection Direct from the Fused Bulb. (Auto-injecteur d'ampoules.) P. Desfosses.
37 (No. 20, pp. 153-160.) Shell injuries of Skull and Brain in Manchuria. (Plaies pénétrantes du crâne et de l'encéphale.) J. J. Matignon.
38 Clinical Exploration of the Colon. (Colons.) J. Okinczyc.
39 (No. 21, pp. 161-168.) *Protection Against Seasickness. (Mal de mer d' imagination.) F. Regnault.
40 Ultramicroscopy (Ultramicroscopes.) A. Cotton and H. Mouton.
41 *Radiotherapy of Rebellious Facial Neuralgia. (Névralgie fac. et radiothérapie.) G. Haret.
42 Dulness Over Intestines. (L'intestin peut être mat.) M. Savariaud.

34. **The Spleen in Organic Heart Disease.**—Barié has been looking over his notes of 216 cases of organic heart disease in which the condition of the spleen was systematically recorded. In about a third of the cases the spleen was more or less abnormal, either enlarged or shrunken or the seat of infarcts. In these cases there was always a history of malaria, dysentery, scarlet fever or some similar condition. No clinical signs were manifest in the cases of atrophied spleen, and the infarcts generally developed unnoticed or at most with a sudden local pain. Enlargement of the spleen, however, was liable to induce actual "spleno-hepatic asystoly." Pallor, relatively frequent, severe epistaxis, and progressive debility are the main signs of this condition. It is characterized by regularity of the pulse, absence of venous congestion, of cyanosis and of olyguria, and by a white and depressible edema. In one case the patient was awakened in the night by a menacing epistaxis, recurring at night several times and requiring tamponing. The vertical diameter of the spleen in this case was 20 cm., nearly 8 inches, and there were only 2,000,000 red and 4,000 white blood corpuscles.

39. **Protection Against Seasickness.**—Regnault's communication on the frequency of what he calls "imagination seasickness" was mentioned in THE JOURNAL, April 6, 1907 page 1220. He is inclined to ascribe the symptoms of seasickness to irritation of the abdominal contents from the sliding around and displacement caused by the motion of the ship. Tightly closed cavities, filled with fluid, are much less liable to have their contents suffer from the motion of the ship than the abdomen. The rubbing of the viscera on each other, he asserts, irritates the nerve ganglia, and the vomiting and other symptoms follow from reflex action. Ptosis of the viscera and dyspepsia favor the development of seasickness, and the symptoms are sometimes relieved by a bandage around the abdomen. Reclining reduces the sliding around of the viscera. Brief relief, he states, can also be obtained by cocain anesthesia of the empty stomach. Direct and indirect suggestion is the treatment for the "imaginary" variety of seasickness, especially when combined with a placebo and a sedative. It is scarcely practicable for the ship doctor to use hypnosis, for obvious reasons which Regnault enumerates, but great benefit may be obtained, he states, if the patient dreading seasickness applies to some specialist in hypnosis before he goes on board. The soil is favorable here, and preventive suggestion is frequently effectual. True somatic seasickness is cured as the patients acquire "sea legs," that is, learn to adapt their position to the motion of the boat. Even this may fail when the sea is extraordinarily rough. Regnault confesses in conclusion that his distinction between real and imaginary affections applies to all kinds as well as to seasickness. "The reason why medical literature is swamped with so much tedious detail and our therapeutics is overburdened with remedies of all kinds, is because some have cured merely imagination affections, unaware of the absence of any somatic basis." He adds that the reminiscences of observant physicians who have grown old in the profession might throw a flood of light on this subject if they would review their experiences from this point of view.

41. **Radiotherapy in Facial Neuralgia.**—Haret reports the complete cure for two years to date under radiotherapy of a patient with what he calls "epileptiform facial neuralgia." The patient, a man, had suffered for years from daily recurring attacks of facial neuralgia, not relieved even by morphin. The teeth had been drawn, the trigeminal nerve resected, the Gasserian ganglion removed, and also the superior cervical ganglion of the sympathetic, with a truce of never more than six months at most after each operation. A number of other cases have been treated in the same way, with improvement or cure in all but one. The best results are obtained when the pains radiate from one or more points to which the radiotherapy can be applied. The exposures are made weekly, using 3 Holzknecht units. The first exposures generally cause transient exacerbation of the pains.

### Deutsches Archiv f. klinische Medizin, Leipsic.

*Last indexed, page 555.*

43 (LXXXIX, Nos. 5-6, pp. 381-652.) Independent Propelling Force in Peripheral Vessels. (Kreislauf in der Peripherie.) M. Matthes and others.
44 *Importance of Examination of Condition of Vessels and Blood Pressure in Case of Renal Hematuria in Nephritis. (Genese der Nierenblutungen.) Kusumoto.
45 *Uric Acid and Purin Bases in Blood and Urine Under Roentgen Exposures. (Verhalten der Harnsäure und Purinbasen.) F. Linser and K. Sick.
46 *Physiology of Sympathetic System. (Symp. Nervensystem.) L. R. Müller.
47 *Pathology of Blood Pressure. (Blutdruck.) Külbs.
48 *Sodium Chlorid Metabolism. (Kochsalzstoffwechsel.) A. Bittorf and G. Jochmann.
49 *Tabes, Affections of Circulatory System and Syphilis. (Tabes dorsalis, etc.) M. Rogge and E. Müller.
50 Hydrocephalus in Epidemic Cerebrospinal Meningitis. (Genickstarre.) W. Schultz.
51 Influence of Smoking on the Circulation. (Rauchen und Kreislauf.) E. Hesse.
52 Blood and Bone Marrow After Suppression of Thyroid Functioning. (Ausfall der Schilddrüsenfunktion.) Esser.
53 Paroxysmal Tachycardia. (Tachykardie.) E. Schmoll. (San Francisco).

54 Enlargement of Heart from Bicycling. (Herzvergrösserung infolge Radfahrens.) Schleffer.
55 Thrombus Formation at Patent Ductus Arteriosus. (Thrombenbildung, etc.) O. Wagener.
56 Severe, Universal Essential Dropsy for a Month in a Healthy Young Man. (Essent. Wassersucht.) H. Wlchern.
57 Landry's Paralysis. (Landry'scher Symptomenkomplex.) Mann and H. Schmaus.

44. **Cause of Renal Hemorrhage in Nephritis.**—Kusumoto reports a case which sustains the assumption that renal hemorrhage may result from rupture of a small vein in the hilus of the kidney in case of extraordinarily high blood pressure and unusual exertion.

45. **Influence of Roentgen Exposures on Blood, Urine and Blood-Forming Organs.**—Study of the behavior of the uric acid and the purin bases in the blood and urine under the influence of the Roentgen rays has corroborated the previous assertions of Linser and Sick on this subject. They give 9 tables of the findings in regard to the metabolism in patients with various affections, mostly cutaneous. They show that the influence of the Roentgen exposures is felt most sensibly by the white blood corpuscles, whether circulating in the blood or still at the points where they are produced. It is still a question whether the exposures affect the blood-forming organs directly or only by mediation of bodies circulating in the blood which have a destructive action on the leucocytes.

46. **Physiology of the Sympathetic Nervous System.**—Müller presents arguments to show that the elations between the brain and the internal organs are much closer than physiologists and neurologists have generally accepted. The functions of the stomach, intestines, bladder, heart and vasomotors are liable to be seriously disturbed by the influence of certain emotions. The fact that sadness, emotional depression, starts the lachrymal glands to extraordinary functioning is so common that no one gives it a thought. The instincts of hunger, thirst, etc., depend to a remarkable extent on a sense of bodily and mental well being. If the sensation of health is disturbed or emotions experienced, these instincts are liable to suffer at once. The opposite conditions induced by pleasurable and disagreeable sensations are aptly styled "moods," and persons who react to them with pronounced phenomena, such as spots of redness in the face when ashamed, or weeping under pain, or "goose flesh" under fear, have an exceptionally excitable vasomotor system. The more recent physiologic research has shown that the internal organs, such as the heart, stomach and intestines, the kidneys, ureters and uterus, possess in themselves the power and the excitation for their functional activity, so that even when entirely cut off from any connection with the nervous system, they are still able to work on in a manner amply sufficient for the maintenance of the vital process. From the clinical side we must also remember, he says, that active—even if unconscious—relations exist between these organs and the central nervous system. Psychic processes—such as are represented by powerful emotions—have more influence on these internal organs than can be realized by will power control of the accessible functions. The sympathetic nerve fibers, he adds, do not pass directly to the brain, but the rôle of the sympathetic system is aptly portrayed by its name, showing how it sympathizes in all moods and emotions to an unrealized extent.

47. **Pathology of the Blood Pressure.**—Külbs reports 14 cases illustrating different phases of pathologic conditions in the blood pressure, and emphasizing their possible variety. In the first case a local, probably tuberculous, process induced paralysis of the respiratory and heart-inhibiting vagus centers. Artificial respiration and massage of the heart restored respiration in the course of 40 minutes. As the breathing ceased, the blood pressure and pulse rose to a remarkable height, probably from irritation of the corresponding centers by the vitiated blood after respiration had ceased. This and another case in his experience show that it is possible for the pulse to persist strong after failure of respiration—in one case for 15 minutes. In a case of recurring angina pectoris with aortic insufficiency, the symptoms indicated painful spastic contraction of the larger vessels branching from the arch of the aorta. As the subjective disturbances subsided, the blood pressure dropped 60 or 80 mm. mercury, to almost normal, and no abnormal findings could be detected in the cardiogram and sphygmogram. Besides the usual measures, most surprising benefit was obtained from artificial respiration. Külbs uses Boghean's "respiration chair," which is a comfortable easy chair with an electromotor below that drives two pads inducing rhythmical compression of the thorax under control. Artificial respiration also proved surprisingly effectual in aborting attacks of bronchial asthma and angina pectoris in other cases, and always brought the blood pressure approximately to normal, relieving the probable underlying vascular crisis. In other cases the asthma did not seem to be influenced except transiently by the artificial respiration. It seemed to be due to irritation from retained secretions, and the artificial respiration did not seem to promote the evacuation of secretions from the air passages. In another case, abuse of tobacco for a month (25 cigarettes a day, inhaling the smoke) induced a syndrome including acutely subnormal blood pressure and marked slowing of the pulse with regular heart action, but acute weakness of the heart and disturbance of the vascular system. Attacks of a chill, vertigo, transient unconsciousness and sweating followed several times in the course of the day; pulse was 32, blood pressure 88, respiration 16. In 4 apparently unusually healthy young men, fond of bicycle racing, the blood pressure was 140-152; 142-156, or 116, and the heart was distinctly and permanently enlarged, but there were trifling or no signs of insufficiency. In 20 cases of pneumonia the blood pressure was low. He noticed, however, that pneumonia affecting a hard drinker always terminated favorably when the blood pressure had been up to 130. The cases with blood pressure of from 80 to 100 in such patients always proved fatal.

48. **Sodium Chlorid Metabolism.**—Bittorf and Jochmann report from von Strümpell's clinic at Breslau a series of 14 cases of kidney or heart disease, or both, in which the metabolism was studied in detail with and without salt in the food. Certain general rules can be deduced from the findings in these cases. In inflammatory processes with effusions, the elimination of sodium chlorid may be normal during the acute phase, but in pneumonia increased intake of salt does not increase the average eliminated. In kidney disease with heart complications, the salt metabolism takes place as in heart disease with failing compensation. In other kidney affections the conditions vary. As a rule, in the cases studied the elimination of sodium chlorid was good. It frequently did not seem to have any connection with the elimination of water. The faculty of eliminating sodium chlorid gives no insight into the kind or severity of the renal affection. They are convinced that changes in the vessels are the cause of the edema, not primary retention of sodium chlorid. Dechloridization, therefore, as a method of treating kidney affections has no scientific basis, they claim, except in so far as the diet as a whole is rendered by it more easily digested and assimilable.

49. **Tabes and Affections of Circulatory System in Syphilis.**—Twenty-four cases are described to illustrate the frequent combination of tabes with affections of the circulatory system on a subsoil of syphilis. In some cases one or the other complication is liable to be overlooked, as they may run a comparatively latent course until some other manifestation of the syphilis strikes the alarm.

### Deutsche Zeitschrift f. Chirurgie, Leipsic.

*Last indexed, page 912.*

58 (LXXXII, Nos. 4-6, Pp. 287-614.) *Lateral Suture of Artery in Extirpation of Aneurism. (Seitliche Naht der Art. bei An.-Exstirpation.) C. Garré.
59 Peritonitis from Perforation of New-forming Diverticulum. (Perforationsperitonitis.) F. Warnecke.
60 *Diagnosis and Treatment of Injuries of Liver. (Leberverletzungen.) G. Dencks.
61 Hernia of the Diaphragm, Especially the Chronic Form. (II. diaphragmatica.) Wietung.
62 *Operative Treatment of Multiple Tuberculous Strictures of the Intestine. (Multiple tub. Darmstrikturen.) H. Ito and S. Asahara.
63 *Cancer Statistics. (Krebsstatistik.) P. Steiner.
64 *Pathology and Treatment of Intestinal Occlusion. (Darmverschluss.) R. Göbell.
65 Unilateral Congenital Hypertrophy of the Face. (Gesichtshypertrophie.) E. Pagenstecher.
66 Case of Defect in the Radius on Right Side and Thumbless Club-hand on the Left. (Radiusdefekt und Klumphand.) F. Lotsch.

67 Mycelium Formation Credited to the Diphtheria Bacillus. (Mycel-bildung des L. Diphtheriestäbchens.) W. Spirig.
68 *Diagnosis of Acute Mediastinal Affections. (Ak. Mediastinalerkrankungen.) M. v. Arx.
69 Symptomatology and Diagnosis of Injuries of the Heart. (Perkutane Herzverletzung.) Momburg.
70 Surgical Treatment of Diverticulum of Esophagus. (Speiseröhrendivertikel.) G. Zesas.
71 Etiology of Rupture of Tendon of Quadriceps. (Quadricepssehnenruptur.) Axhausen.

58. **Lateral Suture of Artery After Extirpation of Sac Aneurism.**—Garré reports what he believes is the first case of extirpation of a true sacculated aneurism with lateral suture of the artery and recovery of the patient. The aneurism had developed from the vein, but the artery was adherent to the vein at this point with a communication between them. The aneurism was resected, the vein ligated above and below, and the opening into the artery closed with a longitudinal suture in the side of the artery. He adds that in case it is deemed unwise to apply the tourniquet, the flow of blood through the artery can be arrested by passing a loop of thread around the vessel, above and below, and occluding the lumen by kinking the artery by simple traction on the thread. This method is less dangerous than application of forceps or direct ligature which is liable to injure the intima.

60. **Injuries of Liver.**—Dencks reports seven cases of injury of the liver in which surgical treatment was successful in three. The injuries in the cases with a favorable outcome were: A bullet wound, a kick from a horse, and injury from being run over. The others were very serious contusions with other injuries. Rigidity extended over the entire abdomen in every case, and the pain on palpation was also diffuse, although more pronounced on the right side. Tamponing alone arrested the hemorrhage in the three favorable cases. The pulse gave no signs of the internal bleeding, being relatively good even in the most rapidly fatal cases. In one instance the gauze tampon answered a double purpose, draining a pus pocket that developed between the diaphragm and the liver. His experience confirms the value of tamponing as the best, safest, most rapid and effectual method of arresting hemorrhage in case of rupture of the liver, although a suture may be advisable for a smooth and conveniently located stab wound.

62. **Operative Treatment of Multiple Tuberculous Strictures of the Intestine.**—Ito and Asahara report five cases. One of the patients succumbed a few months later to acute phthisis. Three others were restored to comparative health. The symptoms are those of any gradually encroaching stricture in the intestines, but they were less pronounced when the stools were watery than with solid stools. Partial exclusion with lateral enteroanastomosis was done in three cases and the results were brilliant in every instance. In another case nothing was done beyond the mere laparotomy, as more than 29 cicatricial strictures of a moderate degree were scattered along the entire small intestine. This patient is still in the clinic and has had no colics since, but the pulmonary affection is continuing a progressive course. The patient treated by resection of 95 cm. of the small intestine succumbed to collapse. Lateral enteroanastomosis relieves the patient at once of all disturbances and by improving the general condition promotes the chances of spontaneous elimination of the remaining infectious germs. Cases are on record in which even a process in the lungs retrogressed afterward.

63. **Permanent Cures After Cancer Operations.**—Steiner reports from Dollinger's clinic at Budapest that of 175 cancer patients operated on 40 per cent. are living at least three years after the operation, and 41.25 per cent. of 80 after an interval of five years at least. These figures include 25 and 18 cases in which the cancer had recurred but had been promptly removed. The cancers are classified according to their location, and the experiences with each group are reviewed in detail.

64. **Pathology and Treatment of Ileus.**—Göbell publishes the report of 63 cases of ileus in which operative treatment was undertaken at Helferich's clinic at Kiel, 1899-1906. In only two instances was it possible to palpate a strangulated loop through the rectum or vagina. Distended loops felt in this way generally proved to be parts of the afferent intestine. In the 21 cases with strangulation the pain was localized in only three, but shock was always present, and initial vomiting occurred in all but five cases. A free effusion was observed in 11 cases. In one the modification of the resonance on change of position led to the assumption of a tuberculous effusion, but puncture brought the contents of the small intestine instead of the expected effusion. He regards appendicostomy as extremely useful and indicated in case of ileus when there is cancerous stenosis of the colon, and in case of volvulus of the cecum and ascending colon if it can be reduced in time. At the same time the appendicostomy fastens the movable colon to the abdominal wall. It is useful also in case of volvulus of the sigmoid flexure when it has gradually developed and the intestine above is very full; also in ileus from paralysis in which the large intestine is extremely distended and can not be evacuated with high injections. The outcome was favorable in 48.3 per cent. of the 31 cases in which the intestine was emptied, and in 47.2 per cent. of the 21 cases in which this was not done. He adds that the main trouble is that patients do not reach the surgeon in time. Better results will be recorded when physicians learn to diagnose strangulation ileus in time, and when they learn that an expectant attitude in case of ileus from occlusion increases the danger from day to day, and that many human lives are sacrificed to the teachings of internal medicine.

68. **Diagnosis of Acute Mediastinal Affections.**—In the case described by Arx a brakeman was thrown under a car and was injured in the heart region by being pushed along by one of the wheels. The fourth left costal cartilage was fractured and the fourth intercostal branch of the internal mammary artery ruptured. The blood escaped into the anterior mediastinum and into the left pleural cavity, but the pericardium did not seem to be injured. Large moist râles and crepitation were audible under the lower part of the sternum, and here only, later subsiding at this point, giving place to dulness, and appearing at a higher point, near the manubrium. There was no emphysema and nothing to indicate injury of the air passages. Arx ascribes this finding to the gradual development of the hematoma in the anterior mediastinum. It pressed back the right half of the heart and thus brought it into a more vertical position, which caused the apex beat to be remarkably strong, coming concentrically direct from below instead of the usual tangential beat. A third unusual symptom was a whistling sound audible at a distance and synchronous with the heart systole. The chest wall vibrated to correspond with this sound, which was audible for about two hours and then vanished to recur again next day for an hour or so. The patient rapidly recovered under expectant treatment, but there is still, a year later, a tendency to cough on exertion, with brief pain in the heart region and along the left margin of the sternum when he coughs or sneezes or lies on his side. The whistling sound Arx explains as due to the concussion of the air in the trachea from the neart as a note is produced in an organ pipe.

### Monatsschrift f. Geb. und Gyn., Berlin.

*Last indexed, page 1068.*

72 (XXV, No. 3, pp. 291-432.) Sclerosis of Uterine Arteries as Cause of Uncontrollable Hemorrhage. (Sklerose der Art. der Gebärmutter.) A. Solowij.
73 Fetal Peritonitis and Consequent Malformations from Mechanical Pressure. (Fötale Perit. und Missbildung.) E. G. Orthmann.
74 Cases of Paraurethral Suppuration. (Paraur. Eiterung.) O. O. Fellner.
75 Chorioepithelioma. (Chorioep.) H. E. Klinge.
76 Histologic Research on Uterine Sarcoma, esp. Myosarcoma. (Uterussarkom, etc.) G. L. Basso.
77 Pseudo-carcinomatous Infiltration of Intestinal Wall in Case of Adnexitis. (Infiltr. der Darmwand.) H. Füth.

### Münchener medizinische Wochenschrift.

78 (LIV, No. 8, pp. 353-400.) Differential Diagnosis Between Reflex and Absolute Immovability of the Pupils. (Pupillenstarre.) L. Bach.
79 Proteolytic Leucocyte Ferment and Its Antiferment. (Prot. Leukozytenferment.) E. Müller and H. Kolaczek.
80 *Specific Solubility and Its Application in Forsenic Blood Tests. (Spez. Löslichkeit.) R. Dehne.
81 *The Blood in Asthmatics. (Blutuntersuchungen.) P. Salecker.
82 *Impure Heart Sounds in Children. (Unreine Herztöne.) H. Neumann.
83 *Operative Treatment of Laryngeal Stenosis. (Kehlkopfstenosen.) Wendel.
84 Appendicitis. (Zur App.-Frage.) K. Garhammer.
85 *Prophylaxis of Retention of Placenta. (Plaz.-Retention.) S. Durlacher.

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86 *Treatment of Tetanus. (Antitoxin bei Tetanus.) K. Urban.
87 Radioactivity of Steben Chalybeate Waters. (Steb. Stahlquellen.) F. Hammer.
88 Sled Frame for Baby Carriage. (Schlittengestell f. Kinderwagen.) Nerlich.
89 (No. 9, pp. 401-448.) Heart Action too Weak to Send Pulse to Peripheral Arteries. (Frustrane Herzkontraktion.) H. Hochhaus.
90 *Study of Pancreatic Juice in Man and Quantitative Determination of Trypsin. (Pankreassaft.) F. Volhard.
91 *The Desmoid Test and the Connective Tissue Test. (Sahli's Desmoid probe und A. Schmidts Bindegewebsprobe.) J. Lewinski.
92 *Intravital Coagulation and Thrombosis in the Vessels of Internal Organs After Ether and Chloroform Anesthesia. (Gerinnungen und Thrombosen nach Narkosen.) O. Mulzer.
93 *Modified Bier Treatment of Affections of Ear and Upper Air Passages. (Stau- und Saugtherapie in Ohr, etc.) K. Vohsen. Id. O. Muck.
94 *Experiences with General Anesthesia with Scopolamin-Morphin-Chloroform. (Skop.-Morphin-Chlor.-Narkosen.) Kreuter.
95 *Advantages of Hydrogen Dioxid in Examination of Sputum. (Auswurfsedimentierungsverfahren mit Wasserstoffsuperoxyd nach Sachs-Müke.) Peters.
96 Metal and Celluloid Insoles for Flat Foot. (Plattfusseinlagen.) K. Lengfellner.
97 Transformation of Lengthwise Extension into Transverse Traction. (Umsetzung von Längsext. im queren Zug.) A. Hofmann.
98 Wire-Celluloid Bandage. (Draht-Zell. Verband.) O. Heine.
99 Nervous Eructation. (Nerv. Aufstossen.) L. Boas.
100 Report of Bavarian Cancer Research Committee, 1905. (Sammelforschung.) K. Kolb. Commenced in No. 8.

80. **Specific Solubility in Forensic Blood Tests.**—Dehne has been studying the phenomenon that specific turbidity and precipitates in a combination of serum and antiserum become rapidly dissolved when undiluted homologous serum is added in excess. Even with mere traces of blood, the appearance of this specific solubility, testing with serums of various organs, points unerringly to the kind of animal from which the blood originally came.

81. **The Blood in Asthma.**—Salecker calls attention to the great fluctuations in the blood picture in cases of asthma. During or immediately after the attack there is pronounced hyperleucocytosis, generally chiefly in the polymorphonuclears, which may increase to 80 per cent. of the total number of leucocytes or even more. The mononuclears, especially the eosinophiles, diminish materially in numbers, but conditions return to normal in the course of a few days. He remarks that we are accustomed to see such violent reactions on the part of the blood only in consequence of bacterial or chemical irritation. His communication is based on examination of 14 asthmatics, half of whom were examined during and immediately after an attack.

82. **Impure Heart Sounds in Children.**—Neumann reports several typical cases in which the children were apparently healthy, with nothing to call attention to the heart except the discovery of a lack of purity in the heart sounds. He noticed this in his private practice in 71 children under 5 years; in 89 between 6 and 10, and in 20 older children. This change in the character of the heart sounds came on suddenly, and he is inclined to think that it is permanent. Preceding catarrhal affections of the upper air passages is almost invariably mentioned in the history, and he thinks that involvement of the heart in infections of the upper air passages, especially of the nose, is so common that the heart should be supervised in all such cases. Children with this anomaly in the heart sounds evidently have something more or less wrong with the heart. Although slight cyanosis and shortness of breath are sometimes observed, as a rule there are no signs indicating disturbance beyond the one mentioned, and the children take cold baths and exercise violently—against the physician's advice—with apparent immunity. It is evident, however, he thinks, that the heart is not intact, and that the life expectancy is more or less modified by it.

83. **Operative Treatment of Laryngeal Stenosis.**—Wendel's patient fell on the edge of a chest and fractured the larynx with resulting cicatricial stenosis. The cicatricial tissue was excised by laryngotomy and the mucosa was mobilized and drawn up to cover the defect, which extended half-way around the larynx. The outcome was excellent.

85. **Prophylaxis of Retention of Placenta.**—Durlacher is inclined to attribute retention of the placenta to reflex action from manipulation of the uterus or abdominal walls. The best means to prevent it, therefore, he says, is to abstain from touching the uterus or abdomen after the child has been delivered. Inspection and control of the pulse and the higher position of the uterus will reveal internal hemorrhage, generally in less than half an hour. When this is observed Credé's method of expression can be applied. He urges the adoption of this strictly expectant treatment on a wide scale in order to test its results. In his experience it permitted spontaneous detachment and expulsion of the placenta even in cases in which at previous childbirths there had always been more or less trouble from this cause, requiring manual measures and accompanied by much hemorrhage.

86. **Antitoxin Treatment of Tetanus.**—Urban reports two cases of tetanus in which death soon followed injection of antitoxin. In a third case no benefit from the antitoxin was visible. As a last resort the compound fracture of the leg was rinsed with 1 per cent. silver nitrate solution daily, commencing the tenth day of severe tetanus; the first symptoms were noticed the twentieth day after the accident. The patient rapidly recovered.

90. **Study of Pancreatic Juice and Determination of Trypsin.**—Volhard introduces 200 c.c. of olive oil into the fasting stomach and in half an hour pumps it out again. The oil induces copious secretion of pancreatic juice, and more or less of it finds its way into the stomach. He describes a simple method with which he was able to determine the presence of active trypsin in the stomach contents in 86 per cent. of 22 cases. This allows excellent oversight of the functional capacity of the pancreas. In one case the absolute absence of pancreatic juice in the stomach was explained by autopsy, which showed the pancreas completely transformed into connective tissue with the duct occluded by concrements. The symptoms during life had been those of severe diabetes without acidosis.

91. **Tests of Stomach Functioning.**—Lewinski's experience does not indicate that Sahli's desmoid test has much value, as catgut does not behave in the stomach like the ordinary raw connective tissue. This explains the occasional contradictory findings. Schmidt's connective tissue test, however, has proved constantly reliable. This is the ingestion of a certain amount of finely chopped raw meat, slightly browned in the oven. Under normal conditions this is completely digested in the stomach, not a trace of the connective tissue appearing in the feces. If it passes through the stomach undigested, it is not attacked by the intestinal juices, and is found in the stools. This was the basis on which Sahli developed his test, but catgut acts differently in the stomach from raw meat fibers.

92. **Injurious Action of Ether and Chloroform on the Blood Vessels of Internal Organs.**—Mulzer has experimented with 64 animals under general anesthesia and his findings sustain the assumption that ether and chloroform have a directly injurious action on the red corpuscles, dissolving them when long in contact. When the anesthesia had been kept up for more than half an hour the vessels in the lungs, liver and kidneys were obstructed with disintegrated red corpuscles, and thrombosis was evident at certain points. These findings had no connection with the amount of the anesthetic administered nor the position of the animal. Injection of ether or chloroform directly into a vein produced the same results as prolonged general anesthesia.

93. **Suction Therapy for Affections of Ear and Upper Air Passages.**—Vohsen has devised a simple means of influencing the nasal sinuses and evacuating morbid secretions. It is based on the Bier method of aspiration with a cupping apparatus, but no apparatus is required. The benefits of the Bier aspiration treatment are the result of the alternation of compressed and rarefied air. The same results can be accomplished, Vohsen says, in affections of the sinuses or middle ear by blowing into the nose, which is held closed, and thus compressing the air in the sinuses, then aspirating out their contents with the mouth and throat muscles, the glottis being closed. The negative pressure that can be thus obtained is much higher than with any mechanical device to date. Hyperemia is induced in the parts, the sinus is emptied, and the procedure can be repeated at will by the patient without harm. By hold-

ing his throat as in the position of yawning and then aspirating out the air with the nose closed tight, he succeeded in drawing out part of an effusion in the middle ear. The only possible drawback to this technic, he adds, is the possibility of conduction of the pressure to the middle ear, but this can be avoided with a little practice. The method is not adapted to every case, of course, but when indicated will be found a great help. Muck gives an illustration of a glass tube whose end fits tight in the ear. The outer end carries a rubber bulb and its application for suction treatment of suppurative affections of the mucosa of the ear has given him uniformly and surprisingly good results. He has applied this treatment in 20 cases of obstinate chronic affections, applying the instrument for one or two minutes, with one-minute intervals, and keeping this up for 15 minutes on alternate days. Healing was complete in every instance in from four to eight weeks. The benefit from the mechanical removal of the secretions is supplemented by the induced hyperemia.

94. **Scopolamin - Morphin - Chloroform Anesthesia.**—Kreuter writes from Graser's clinic at Erlangen to extol the advantages of this combined method of general anesthesia. He asserts that the lack of danger as the dosage is so small, the small amount of the chloroform or ether required, and the reduction of secretion under the influence of the scopolamin, are not the least of its advantages. He thinks that it may materially reduce the number of cases of postoperative pneumonia. The only drawbacks of the method that he has discovered are the uncertainty of the action of the scopolamin and the subjective sensation of dryness. He recommends the combination particularly for the long protracted operations, even for much debilitated patients, adding his testimony that "it is the most humane technic known to date."

95. **Hydrogen Dioxid as Aid for Examination of Sputum.**—Peters commends the addition of hydrogen dioxid to the sputum as a simple and most effectual means of breaking up tenacious masses and distributing the tubercle bacilli evenly through the specimen.

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101 (LXI, Nos. 3-4, pp. 201-388.) Treatment of Advanced Laryngeal Tuberculosis. (Larynxtub.) A. Those.
102 **Mechanical Stimulation of Secretion of Gastric Juice.** (Mech. Erregbarkeit der Magensaftsekretion.) A. Schiff.
103 Scleroma: Its Importance in Army. (Sklerom.) J. Feln.
104 Paralysis of Recurrent Nerve on Functional Basis. (Lähmung des Nervus rec.) R. Landesberg.
105 *Mixed Infection in Pulmonary Tuberculosis and Its Importance, as Well as that of Intestinal Tuberculosis, for Amyloid Degeneration. (Mischinfektion bei Tub., etc.) J. Sorgo.
106 Venous Murmurs in Interstitial Liver Affections. (Venengeräusche bei der interstit. Hepatitis.) G. Catti.
107 *Deviation of Complement in Diagnosis of Typhoid. (Komplementablenkung in Typhusdiagnose.) H. Hirschfeld.
108 *Laws Regulating Elimination of Sugar in Diabetes mellitus. (Zuckerausscheidung beim Diab. mell.) W. Falta and A. Gigon.
109 *Trypsin in Treatment of Cancer. (Trypsin—Pankreatin—bei Karzinom.) E. v. Leyden and P. Bergell.
110 **The Antiferments.** (Antiferm.) A. Schütze and P. Bergell.
111 Patency of Foramen ovale and Its Diagnostic Importance. (Offen. For. ovale.) J. Ohm.

105. **Amyloid Degeneration in Tuberculosis.**—The researches reported by Sorgo, who is the medical chief of the great Alland sanatorium, demonstrate that amyloid degeneration in phthisis is always the result of mixed infection in case of a pulmonary process, or else is a sign of a tuberculous process in the intestines. The practical conclusion follows that in case mixed infection can be excluded by examination of the sputum, the discovery of amyloid degeneration points to an existing tuberculous process in the intestines. He gives the details of 49 patients examined from this point of view. He found that 38 of the patients had no signs of mixed infection in the sputum.

107. **Hemolytic Blood Test in Diagnosis of Typhoid.**—Hirschfeld has been studying the application of the deviation of complement as a test for the diagnosis of typhoid. The serum used was that taken for the agglutination test, and in the 15 cases under observation the results of the test were constantly positive and gave positive findings much earlier than the agglutination test. The findings proved strictly specific in his experience, and they ensured the diagnosis at an earlier date than was possible with the agglutination test. It requires an expert, however, to make the test, as it would be too expensive, tedious and delicate for general practice, but the findings may prove of inestimable service in certain cases.

108. **Laws of Elimination of Sugar in Diabetes.**—Falta and Gigon state that their experience has confirmed that of others in respect to the difficulty diabetics encounter in the disposal of maltose. These patients are much less able to tolerate maltose than levulose or any other carbohydrate. The details of the metabolism in 8 cases are given in numerous tables, the metabolism studied from some new standpoints, emphasizing the "superposition curves," etc.

109. **Trypsin in Treatment of Cancer.**—In this communication from von Leyden's clinic, two laws regulating the growth of cancer are specially emphasized, namely, the fact that in its origin and growth carcinoma is a strictly local phenomenon, and that its most striking feature is its unlimited proliferating power. It is also pointed out that the tumor reacts with increased growth to all kinds of injuries, mechanical, thermic and chemical. For half a century medical science conducted its research on cancer almost exclusively along morphologic lines, but now the questions are: Is there a specific production of substances in cancer? and: Is it possible to induce a specific destruction of these substances? Research has shown that there is probably a production of a specific albumin in malignant tumors, and that this albumin is promptly digested by the ferment trypsin. The experimental experiences with trypsin, so far reported, show that larger amounts of trypsin pass into the blood when it is given by the mouth than when it is injected subcutaneously. Injected directly into a carcinoma in man, the results proved disappointing. The resulting digestion of the cancer cells was always circumscribed and there was no question of a cure in any case. Given internally, even for long periods and in large amounts, no decisive influence could be demonstrated in case of inaccessible internal carcinoma. On the other hand, nearly every case of carcinoma of the stomach, not too far advanced and still free from metastases, exhibited an unmistakably favorable reaction to the trypsin. The verdict from this clinic is thus, that trypsin to date, while displaying a curative influence, can not yet be heralded as a definite method of treatment. A new fact has been learned, however, possibly of far-reaching importance, namely, that a tumor whose cells have been digested (dissolved) by the trypsin in some circumscribed area never reacts to this interference with increased growth, either locally or in general. This fact recalls the selection in respect to injections of radioactive substances. This exceptional absence of increased growth under the influence of the trypsin, von Leyden regards as significant, showing an actual specific destructive process even if it is only temporary.

## Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

TREATMENT OF SKIN CANCERS. By W. S. Gotthelf, M.D., Adjunct Professor of Dermatology at the New York Postgraduate Medical School and Hospital. Third Edition. Revised and Enlarged. Cloth. Pp. 89. Price, $1.00. New York: Surgery Publishing Co., 1907.

COMMON BACTERIAL INFECTIONS OF THE DIGESTIVE TRACT, and the Intoxications Arising From Them. By C. A. Herter, M.D., Professor of Pharmacology and Therapeutics in Columbia University. Cloth. Pp. 360. Price, $1.50 net. New York and London: The Macmillan Co. 1907.

ATLAS AND EPITOME OF DISEASES OF CHILDREN. By Dr. R. Hecker and Dr. J. Trumpp of the University of Munich. Authorized Translation from the German. Edited by Isaac A. Abt, M.D., Assistant Professor of Diseases of Children in Rush Medical College. With 48 Colored Plates and 147 Illustrations. Cloth. Pp. 453. Price, $5.00. Philadelphia and London: W. B. Saunders Co., 1907.

METABOLISM AND PRACTICAL MEDICINE. By Carl von Noorden, Professor of the First University Medical Clinic, Vienna. Anglo-American Issue Under the Editorship of I. Walker Hall, Professor of Pathology, University College, Bristol. Vol. I.—The Physiology of Metabolism, by Adolf Magnus-Levy, Berlin. Cloth. Pp. 450. Price, $4.00 net. Vol. II.—The Pathology of Metabolism, by Carl von Noorden, Fr. Kraus, Ad. Schmidt, W. Weintraud, M. Matthes and H. Strauss. Cloth. Pp. 525. Price, $6.00 net. Chicago: W. T. Keener & Co., 1907.